92-07208/

MARKET SURVEY OF ENVIRONMENTAL EXPENDITURES BY CANADIAN BUSINESS

PREPARED FOR:

ENVIRONMENT CANADA

PREPARED BY:

DUNS MARKETING SERVICES
DUN & BRADSTREET CANADA

MARCH, 1992

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EXECUTIVE SUMMARY

The environment and environmentalism has been a growing concern within Canada and worldwide since the early 1970's. At that time, environmental action tended to be the preserve of a small group of scientists, pollution activists and communities affected by "major" environmental damage. Since that time, the environment has come to dominate social and political issues. The watchword for individuals, business and government has become "environmentally friendly".

The Federal government's recently launched Green Plan outlines a comprehensive set of social, economic and political objectives and goals to address environmental issues. A central theme of the Green Plan is the concept of "sustainable development". To quote the authors of the Green Plan; "Sustainable development is described, in general, as activity in which the environment is fully incorporated into the economic decision-making process as a forethought, not an afterthought".

Clearly then, environmental actions and regulations can not be made without regard to the economic health of the society making those decisions. As the Green Plan authors highlighted, "economic growth is essential if we are to enjoy the services to which we have become accustomed". In early 1990, Environment Canada awarded a contract to Dun & Bradstreet Canada to conduct a large scale survey of Canadian business to ascertain the cost and impact of current and future environmental protection measures.

The following report presents the results of the first study undertaken to obtain cross-industry national environmental protection data. Other studies have been conducted in the past, but all have been limited either by geographic coverage or have been specific to a particular industry sector.

There are limits however to the scope of this study. The key limit being, that for cost and time reasons, industry sectors that have been, and will likely be in the future, least affected by environmental regulation were excluded from the survey. In total 584 specific industry segments were surveyed for this study. For analysis purposes, surveyed companies were segmented in three ways; by company size (i.e. those who had less than or more than 50 employees), by region (i.e. Western Canada, Ontario, Quebec, and Eastern Canada), and by major industry sector (21 major groups).

TYPES OF POLLUTION BUSINESS DEALING WITH

As can be seen from Chart 1 at the end of this section, the most common environmental problem faced by Canadian business is SOLID WASTE disposal. Approximately eight in ten surveyed companies mentioned having to deal with solid waste. Half of Canadian businesses are dealing with an AIR quality problem, while just under one in four companies is dealing with a WATER quality problem. LAND MANAGEMENT was being practiced by less than one in ten of all companies surveyed, although nearly two in ten of the larger companies mentioned doing land management.

AIR quality is a problem faced equally by all sizes of companies and companies in all regions. WATER quality on the other hand is a greater problem for larger firms than smaller companies, and affects almost a third of the surveyed companies in Ontario. SOLID WASTE disposal was reported to be less of a problem for larger companies as well as by companies located in Quebec, although it is by far the greatest problem for all sizes of companies in all regions.

(Reference: Chart 1)

AVERAGE POLLUTION CONTROL EXPENDITURES

A crucial component of this research survey was to determine the current and future cost to business of environmental protection measures. Companies were asked to provide expenditure data for twelve specific areas covering both capital and operating costs for both the current year and 1992. Overall, the vast majority of companies provided data, even if it was only to indicate that they spent nothing on a particular area.

Of all the surveyed companies with less than 50 employees, the average 1989 pollution control expenditure was just under $20,000. This was split equally between capital costs and operating costs. When we consider the average expenditure (in 1989) of companies with less than 50 employees who ACTUALLY spent on environmental protection measures, the total increases to just under $200,000, again almost equally split between capital and operating costs.

As would be expected, the total 1989 average expenditure of all surveyed 50 plus employee companies was significantly higher (almost $1,000,000). Larger companies tended to spend a slightly higher proportion (53%) on capital costs than on operating costs. The total average expenditure of 50 plus employee companies who ACTUALLY spent on environmental protection was almost $3,000,000. The proportion actually spent on capital costs was even higher at 56%.

(Reference: Chart 2)

When we consider the average 1989 pollution control expenditure made by all companies on a regional basis (regardless of employee size), companies in Ontario spent in total slightly over $300,000. This is compared with a total 1989 average expenditure of just under $200,000 by western based firms, $140,000 by eastern Canadian companies and $100,000 by Quebec based companies.

All surveyed companies in western Canada spent less than half as much on operating costs than on capital costs in 1989, indicating that these companies are having to make major equipment or physical plant modifications. In contrast, all surveyed companies in the other three regions indicated that they had spent slightly more, on average, on operating costs than on capital costs.

Looking at the average expenditure data just based on companies who ACTUALLY spent on environmental control measures results in a slightly different ranking of regions. Western based companies made the highest total average expenditure of any region (slightly over $1.5 million), followed closely by Ontario based companies who spent just over $1.4 million. Eastern Canadian companies who actually spent, average almost $950,000 in total, while Quebec based firms averaged just under $850,000.

As was noted earlier, Western companies are spending more than twice as much on capital expenditures as on operating costs. The split between capital costs and operating costs is much closer in all three of the other regions. Amongst companies who ACTUALLY spent on environmental protection only companies in Quebec spent less on average on capital costs than on operating costs.

(Reference: Chart 3)

PROJECTED POLLUTION CONTROL EXPENDITURES

Beyond determining average pollution control costs to Canadian business, a key objective was to determine a total dollar value for environmental expenditures. This figure was determined by taking the survey results and projecting to the national business population. Details of the mechanics used to determine this figure are explained in Section 4.3 of the report and in Appendix C.

Two factors must be mentioned at this point; firstly, as explained earlier, this survey did not cover all industry sectors, but did cover those which would be most affected by environmental regulations; secondly, this is a survey and not a census, and therefore the results are subject to sampling error (albeit small given the total sample size).

In fiscal 1989, the 21 major industry groups (comprised of 584 specific industry sectors) included in this survey spent a total of $20,902,416,708 on environmental protection measures. Of this $21 billion, companies with less than 50 employees spent almost $9 billion while companies with 50 or more employees spent $12 billion. Moreover, it must be noted that companies with 50 or more employees represent only about 4% of the total business universe included in this survey.

On a regional basis, companies located in the West spent the most on pollution control measures ($9.8 billion). Ontario based companies spent just over $8.3 billion, while companies in Quebec spent $2.2 billion. It should be noted however, that these three regions have approximately equal proportions of the total Canadian business universe included in this survey (34% in Ontario, 33% in the west and 26% in Quebec). The eastern region which accounts for about 7% of the total business population spent in total just over $500 million on pollution control expenditures.

(Reference: Chart 4)

In terms of the 21 major industry sectors covered, on a national basis, the Forestry Products sector spent the most on environmental protection measures ($5.2 billion). This sector was followed closely by the Primary Metal Fabrication sector which spent just over $5 billion and by the Wholesale Trade sector which spent just over $4.4 billion. It must be noted however, that the Forestry Products and Metal Fabrication sectors account for about 4% and 2% respectively of the total business sample universe, while the Wholesale sector accounts for 19%.

Two other sectors that account for a large proportion of the sample universe are the Miscellaneous Retail Trade industry (17%) and the Business and Personal Services sector (17%). Both sectors are also major spenders on environmental protection measures. The Retail Trade sector spent slightly more than half a billion and the Business/Personal Services sector spent just under $500 million.

(Reference:- Chart 5)

Clearly then, the monies spent by Canadian business on environmental protection measures are significant on a total basis, and in many industry sectors on an individual company basis. For more than half of those companies who actually spent money on environmental protection, these expenditures were financed through profit re-investment and or cash flow. The second most common method of financing was the use of short term bank debt used by slightly more than one in ten companies.

Less than a quarter of all companies who actually spent on environmental protection measures indicated that they had to raise product costs due to their environmental expenditures. Of those who did raise their product costs, 55% indicated that the price increase was 4% or less. A slightly higher percentage (36%) of companies who actually spent indicated that they have had to accept a lower profit margin due to environmental expenditures. Forty-six percent of those who did accept a lower margin indicated that the decrease was 4% or less. A further 20% indicated that their profit margin had fallen by 5 to 10%.

When the surveyed businesses were asked what effect current environmental protection standards have had on their Canadian competitive position, nearly three in ten stated that the effect had been positive, and almost six in ten indicated that current standards have had a neutral effect. Only one in ten stated the their Canadian competitive position had been negatively impacted.

However, a more clouded view of the impact of future environmental standards was seen by the businesses surveyed. Again three in ten felt that future standards would have a positive effect on their overall competitive position. Only four in ten felt that there would be a neutral effect, while close to a quarter of all surveyed businesses indicated that future environmental standards would have negative effect.

Finally, surveyed businesses were asked to indicate the types of environmental actions they had or will be taking corporately in the past or next two years. (This covered items like hiring environmental consultants, appointing a company official for environmental affairs or participating in an environmental assessment etc..) Of all the companies surveyed, more than half stated that they had taken none of these actions in the past two years, nor were they likely to in the next two years.

However, there is a very great difference between the larger companies and their smaller counterparts. For example half the larger companies stated that they had consulted or meet with environmental regulators in the past two years whereas only 16% of the small business segment had done likewise. Nearly a third of the larger companies had appointed a company official for environmental affairs, and a further 28% had hired outside environmental consultants. Almost a quarter of the larger firms had participated in an environmental assessment study in the past two years.

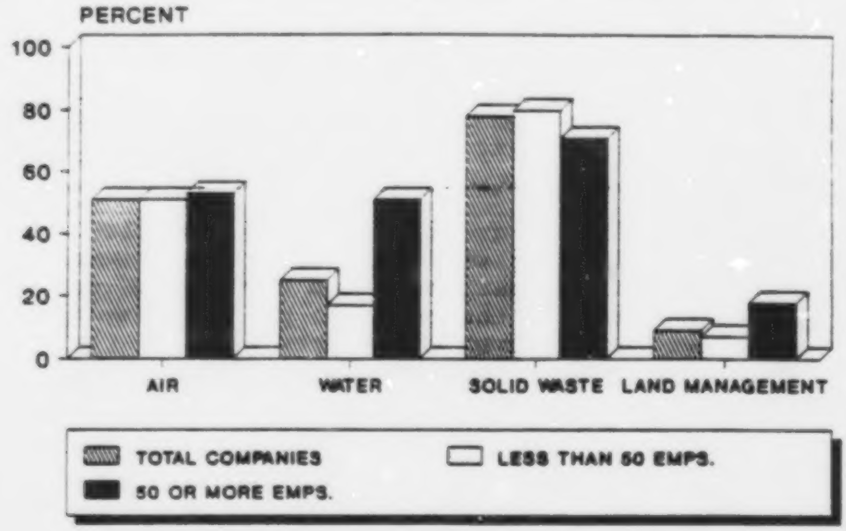
The survey results suggest that this pattern of greater participation by large business will continue in the future. Clearly, the environmental message has penetrated the corporate culture of Canada's largest companies. The challenge in the future will be to ensure that this awareness is communicated to businesses of all sizes and in all sectors.

In conclusion, we quote again from Canada's Green Plan;

> "We must meet our environmental goals in ways that promote economic prosperity. For example, to operate at its full potential, Canadian business needs clear rules dealing with the use of environmental resources, and these should be applied fairly and consistently. We must regulate the environmental impact of economic activity, but we must do so effectively and efficiently."

CHART 1

TYPES OF POLLUTION DEALING WITH TOTAL AND EMPLOYEE SIZE



TYPES OF POLLUTION DEALING WITH TOTAL AND REGIONAL COMPANIES

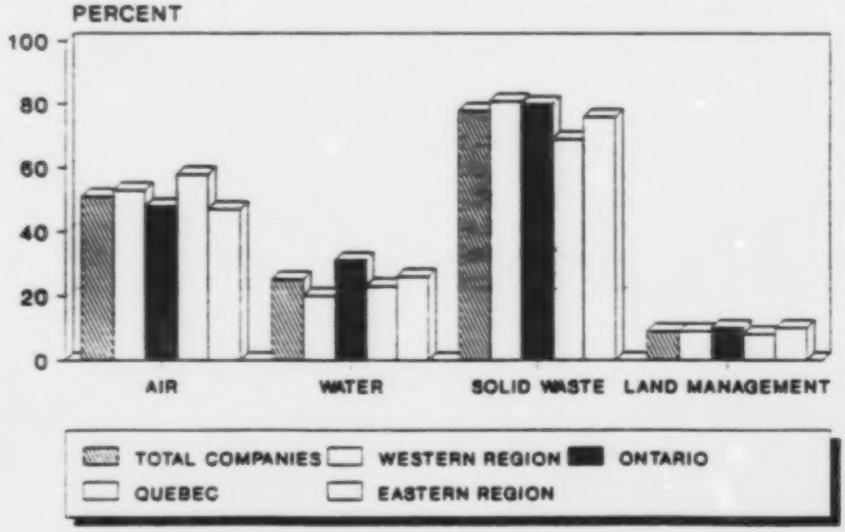
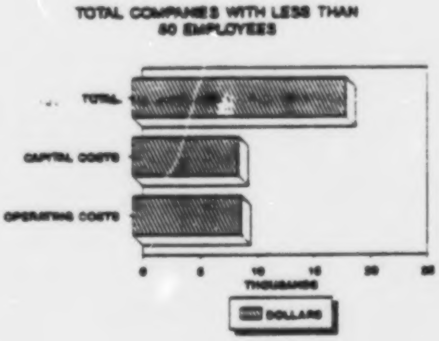
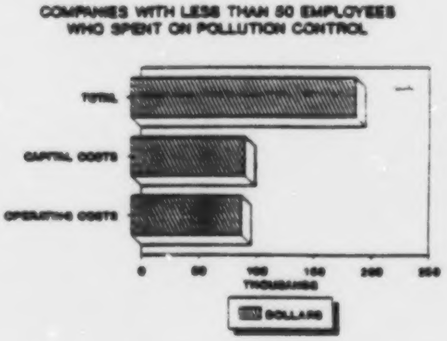


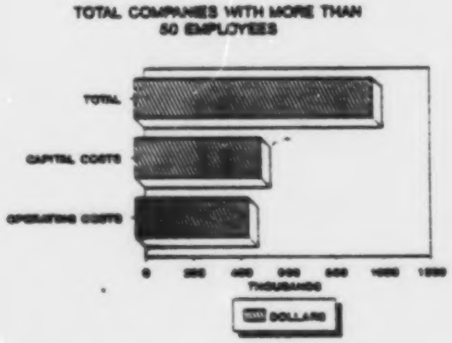
CHART 2





AVERAGE 1989 POLLUTION CONTROL EXPENDITURES

(COMPANY SIZE)



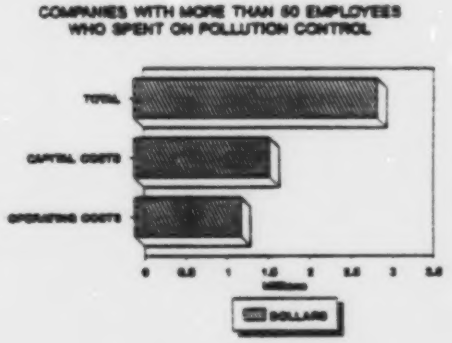
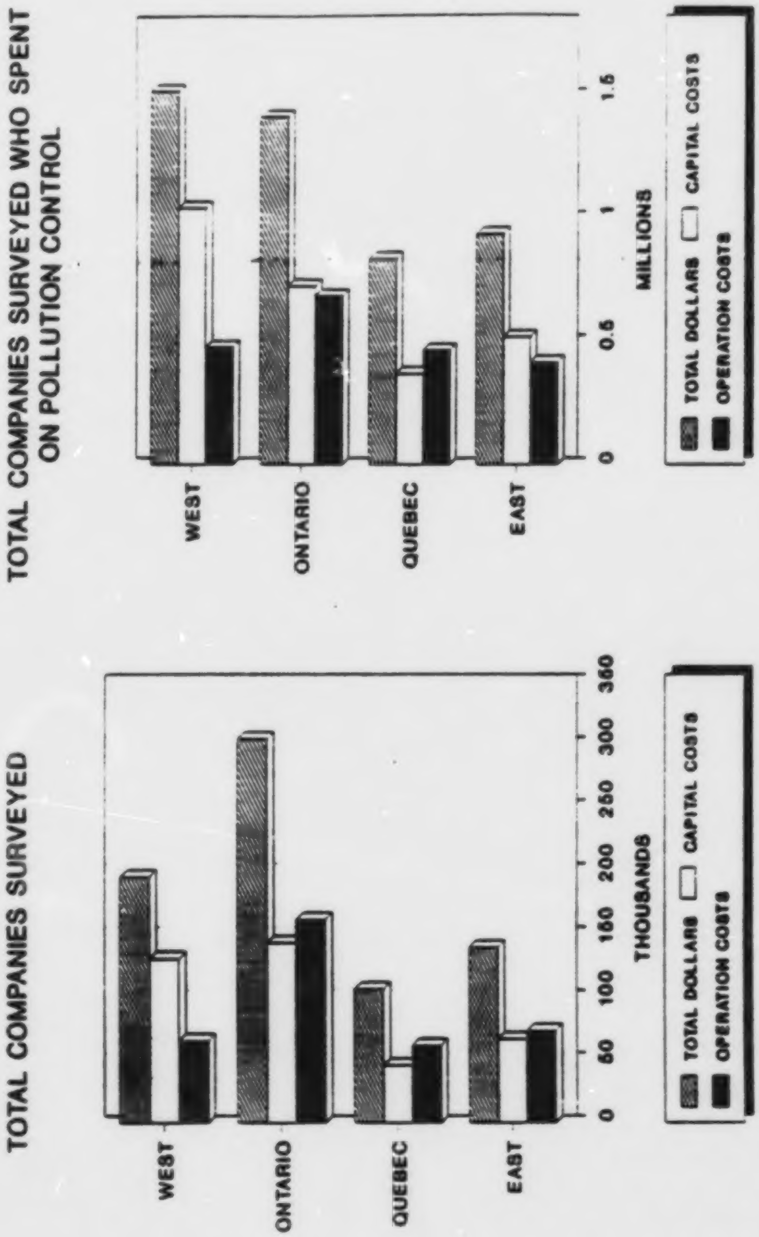


CHART 3

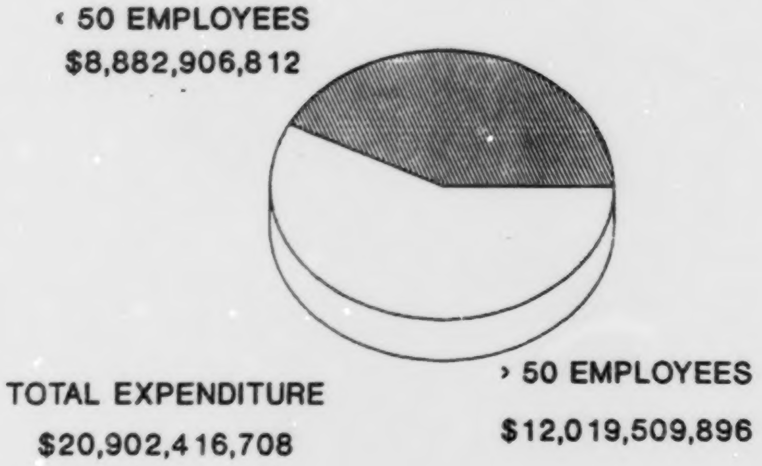


AVERAGE 1989 POLLUTION CONTROL EXPENDITURES
(REGIONAL COMPARISON)

CHART 4

ENVIRONMENTAL EXPENDITURES PROJECTED TO NATIONAL BUSINESS POPULATION

(COMPANY SIZE)



ENVIRONMENTAL EXPENDITURES PROJECTED TO NATIONAL BUSINESS POPULATION

(BY REGION)

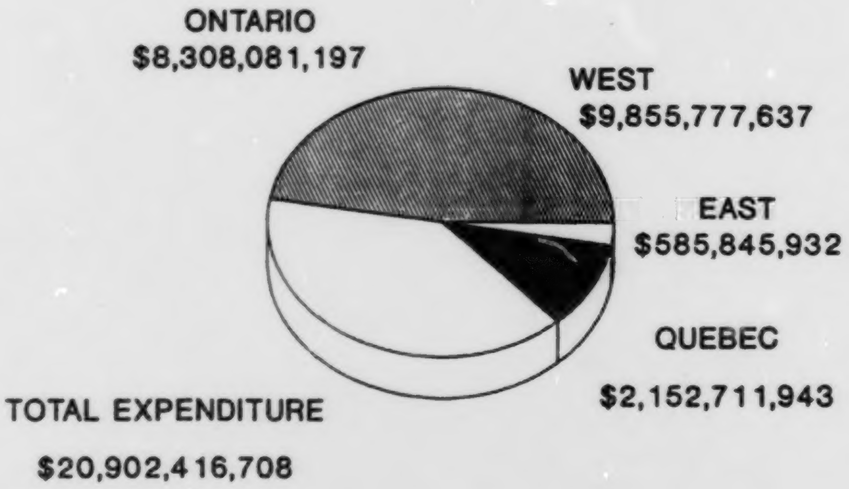
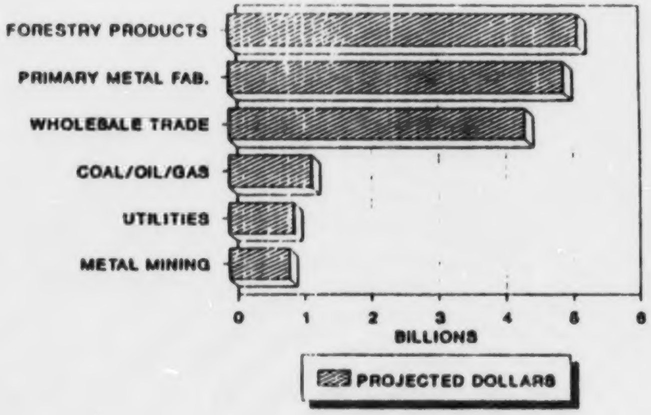
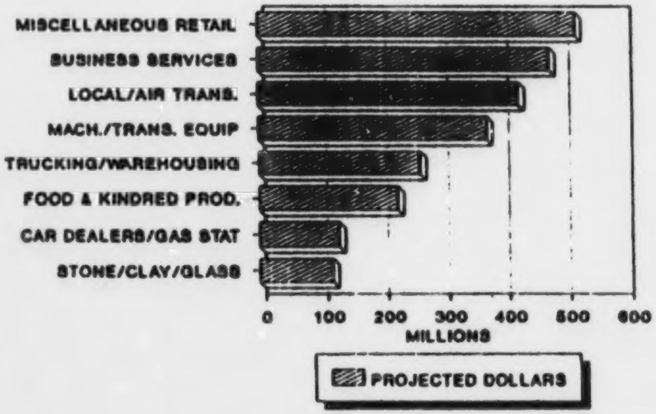
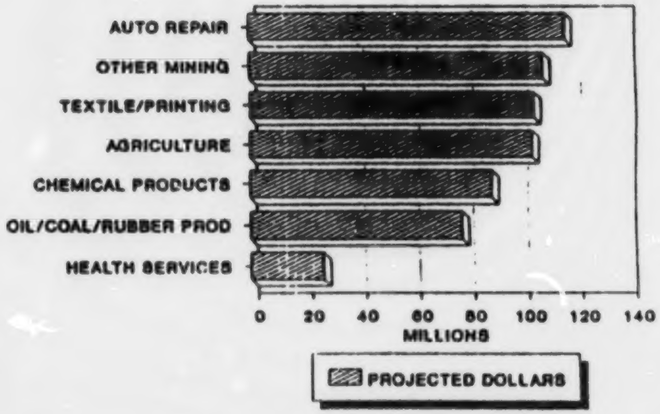


CHART 5

ENVIRONMENTAL EXPENDITURES PROJECTED TO THE NATIONAL BUSINESS POPULATION BY INDUSTRIAL SECTOR







1.0 INTRODUCTION

In early 1990, Environment Canada awarded Duns Marketing Services (DMS) a contract to test the feasibility of conducting a large scale survey of Canadian business to determine the overall cost of environmental protection. This was to be the first survey of its kind to attempt to ascertain the cost to business of environmental protection by surveying a broad cross-section of businesses.

The results of the test survey indicated that a study of this type was feasible and would result in the desired cost projections. It was determined however, that a slightly different approach was needed to interview small business (less than 50 employees) than large business (50 employees or more). As a result, in the main study, (conducted during the fall and winter of 1990) the interview used for small business was a pared down version of the questionnaire used for large business. (See Appendix A for copies of the questionnaires)

Since it was determined in the test phase that small business people were somewhat intimidated by the complexity of the questionnaire and in fact some of the terms used, it was decided to use a more direct approach to gathering the data. Thus, the small business questionnaire was administered via telephone interviews which afforded the interviewer the opportunity to explain some of the more complex terms and questions.

As in the test phase, the large business interview was mailed to the sampled company. Prior to mailing the questionnaire to the large business sample, a telephone recruiting phase was undertaken whereby, DMS interviewers contacted each of the sampled companies to identify the most appropriate individual in the company to mail the questionnaire to and to obtain their cooperation in completing it. A telephone follow-up was also conducted to prompt for response.

2.0 SAMPLING AND METHODOLOGY

2.1 THE DUN & BRADSTREET DATABASE

In conjunction with Environment Canada, a random sampling of companies was selected from the Dun & Bradstreet database. The D&B database is the most comprehensive Canadian listing of businesses, providing information on company location, employee size, industry sector, sales volume as well as other financial data. Currently, there are approximately 670,000 Canadian businesses listed on the D&B database. The database has almost universal coverage of companies in the manufacturing sector and or companies with more than five employees.

2.2 THE STANDARD INDUSTRIAL CLASSIFICATION SYSTEM

One of the major features of the database is the ability to target specific industry sectors using the Standard Industrial Classification system (SIC). The SIC system is used by both business (such as D&B) and the Canadian government to segment the business population by line of business. Every business in the D&B database has been assigned at least one SIC code based on that company's primary line of business. Many companies have a prime and also secondary SIC codes since the company is involved in more than one related line of business.

The SIC classification system is divided into 74 two digit groups (for example, 07 is Agricultural services). Within each two digit group, companies are further segmented into four digit groupings (for example under Agricultural services there is 0711 Soil Preparation Services, 0721 Crop Planting and Protection etc.). In total there are approximately 1,500 four digit SIC classification groups in the Canadian system.

2.3 SAMPLE SEGMENTATION

Using the Standard Industrial Classification system, a total of 21 industry cells (at the two digit SIC level) were selected representing those industry sectors currently most affected by environmental protection legislation, as well as those most likely to be affected in the near future. The tables that follow show the starting universe and the number of completes by employee size and by region. (See Appendix B for a listing of the SIC groups included in each industry sector.)

It should also be noted that a small number of questionnaires were completed and used in the data set for which we were unable to allocate a region or SIC grouping. Thus there will be small differences in the bases used in the body of the text and the projection statistics. This has no meaningful effect on the percentages.

(Reference: Tables 1-6)

Once the industry sectors had been selected, the sample was arbitrarily split into two segments by employee size, defined as companies with fewer than 50 employees and companies with more than 50 employees. The Canadian business population, like business populations worldwide is heavily skewed to small business. One of the objectives of this research was to profile similarities and differences between large and small businesses.

No regional sample controls were put in place, rather companies were selected from the total universe on a purely random basis. Thus resulted in a sectoral distribution of companies which was in proportion to that industries regional distribution. For example, companies in the Coal/Oil/Gas sector are concentrated in western Canada, and thus there were a greater number of these companies interviewed in the west than in other regions. Overall, companies in all ten provinces and two territories were interviewed. As would be expected, the largest number of companies interviewed were in Ontario and Quebec.

It should be noted at this point, that the questionnaire used for large and small businesses differed somewhat. The only difference was that small companies (i.e. those that had fewer than 50 employees) were asked fewer questions. The logic behind this was twofold; first since we were interviewing these firms by telephone we wanted to keep the interview to a reasonable length, and secondly it was felt that small businesses may not have the same level of record keeping that large business would have.

As will be noted later in this report, some of the larger companies which were selected as representing 50 plus employee firms (and thus were mailed the long version of the questionnaire) were later classified in the less than 50 employee group. This likely occurred due to the length of time between the initial sample selection and the completion of the interview. In the intervening time, these companies downsized and thus fell into the "small" business group. Therefore, those questions which had been asked only of the large companies also have data for a small group of companies with less than 50 employees. The results for these questions should be treated with caution given the small base size.

2.4 SAMPLE COVERAGE (STATISTICAL VALIDITY)

The total Canadian business universe in the 21 selected SIC categories numbers approximately 286,000 companies. The over and under 50 employee split resulted in about 25% of the universe being classified as "large business" and 75% as "small business". Since there is a widely held belief that large business is both more affected by environmental issues, and more proactive about addressing these issues, the sample was skewed to large business.

As a result, 4.5% of the total large business universe completed surveys (a higher percentage was actually contacted to participate). Amongst the small business universe, 0.7% of companies completed a survey. From a statistical sampling point of view, both sectors are more than adequately sampled. Results presented in percentages are accurate within plus or minus 1.8% (or less) at the 95% confidence level. (As an example, national opinion surveys are accurate within two to three percent based on a sample of 1,500 individuals from a population of 18,000,000 aged 20 plus years).

Clearly then, the results that follow can be considered accurate and highly representative of the trends occurring in the business sector. However, there are a few industry sectors which when analysed within region should be treated with caution due to the relatively small number of companies surveyed. Overall though, when the data is analysed by the two company size groups, or by region, or by industry sector (on a national basis) the results can be interpreted with confidence.

It should be noted however, that the survey targeted those 21 industry sectors which are currently most affected by environmental regulations, and/or are most likely to be affected. No attempt was made to include any of the other 54 major SIC sectors. The results that follow are therefore confined to a specific portion of the Canadian business population.

TABLE 1

INDUSTRY CLASSIFICATION UNIVERSE VS SAMPLE

LESS THAN 50 EMPLOYEES

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	8,667	3	77	4	1
FORESTRY/LUMBER/ PAPER PRODUCTS	10,293	4	118	6	1
METAL MINING	1,435	1	17	1	1
COAL/OIL/GAS	3,644	1	68	4	2
OTHER MINERAL MINING	593	**	18	1	3
FOOD MANUFACTURING	2,824	1	34	2	1
TEXTILE/PRINTING/ LEATHER PRODUCTS	8,047	3	85	5	1
CHEMICALS AND ALLIED PRODUCTS	1,460	1	67	4	5
OIL/COAL/RUBBER PRODUCTS	1,476	1	102	6	7
STONE/CLAY/GLASS PRODUCTS	2,018	1	30	2	2
PRIMARY METAL FABRICATION	4,913	2	122	7	2
MACHINERY/TRANSPORTATION EQUIPMENT	9,127	3	93	5	1
LOCAL AND AIR TRANSPORTATION	3,106	1	133	7	4
TRUCKING & WAREHOUSING	20,170	7	177	9	1
PIPELINE/ELECTRIC/GAS SERVICES	1,211	**	35	2	3
WHOLESALE TRADE	52,876	19	176	10	.3
AUTO DEALERS/SERVICE STATIONS	21,157	8	89	5	.4
MISC. RETAIL & REPAIR	48,397	18	58	3	.1
PERSONAL & BUSINESS SERVICES	48,242	18	97	5	.2
AUTO REPAIR	20,711	8	193	11	1
HEALTH SERVICES	3,717	1	50	3	1
TOTAL	274,084	100	1,837	100	1

* NUMBER OF INTERVIEWS COMPLETED DIVIDED BY TOTAL NUMBER OF ESTABLISHMENTS IN SIC GROUP.

** LESS THAN 0.5%
NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 2

INDUSTRY CLASSIFICATION UNIVERSE VS SAMPLE

MORE THAN 50 EMPLOYEES

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	93	1	4	1	4
FORESTRY/LUMBER/ PAPER PRODUCTS	755	6	34	6	5
METAL MINING	132	1	15	3	11
COAL/OIL/GAS	199	2	24	4	12
OTHER MINERAL MINING	50	**	10	2	20
FOOD MANUFACTURING	553	5	64	12	12
TEXTILE/PRINTING/ LEATHER PRODUCTS	700	6	25	5	4
CHEMICALS AND ALLIED PRODUCTS	310	3	47	8	15
OIL/COAL/RUBBER PRODUCTS	320	3	46	8	14
STONE/CLAY/GLASS PRODUCTS	190	2	32	6	17
PRIMARY METAL FABRICATION	732	6	43	8	6
MACHINERY/TRANSPORTATION EQUIPMENT	1,117	9	32	6	3
LOCAL AND AIR TRANSPORTATION	319	3	28	5	9
TRUCKING & WAREHOUSING	498	4	54	10	11
PIPELINE/ELECTRIC/GAS SERVICES	138	1	9	2	7
WHOLESALE TRADE	1,847	15	43	8	2
AUTO DEALERS/SERVICE STATIONS	816	7	5	1	1
MISC. RETAIL & REPAIR	517	4	1	**	.2
PERSONAL & BUSINESS SERVICES	1,516	13	27	5	2
AUTO REPAIR	131	1	4	1	3
HEALTH SERVICES	1,144	9	9	2	1
TOTAL	12,077	100	556	100	5

* NUMBER OF INTERVIEWS COMPLETED DIVEDED BY TOTAL NUMBER OF ESTABLISHMENTS IN SIC GROUP

** LESS THAN 0.5%

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 3

INDUSTRY CLASSIFICATION UNIVERSE VS SAMPLE

WESTERN REGION

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	3,211	3	21	3	1
FORESTRY/LUMBER/ PAPER PRODUCTS	4,033	4	62	8	2
METAL MINING	1,032	1	16	2	2
COAL/OIL/GAS	3,561	4	82	11	2
OTHER MINERAL MINING	265	**	11	1	4
FOOD MANUFACTURING	903	1	15	2	2
TEXTILE/PRINTING/ LEATHER PRODUCTS	2,159	2	18	2	1
CHEMICALS AND ALLIED PRODUCTS	396	**	23	3	6
OIL/COAL/RUBBER PRODUCTS	370	**	43	6	12
STONE/CLAY/GLASS PRODUCTS	689	1	14	2	2
PRIMARY METAL FABRICATION	1,412	2	29	4	2
MACHINERY/TRANSPORTATION EQUIPMENT	2,526	3	30	4	1
LOCAL AND AIR TRANSPORTATION	1,128	1	31	4	3
TRUCKING & WAREHOUSING	8,499	9	68	9	1
PIPELINE/ELECTRIC/ GAS SERVICES	397	**	14	2	4
WHOLESALE TRADE	16,421	18	83	11	1
AUTO DEALERS/SERVICE STATIONS	6,960	7	30	4	.5
MISC. RETAIL & REPAIR	15,266	16	16	2	.1
PERSONAL & BUSINESS SERVICES	15,524	17	29	4	.2
AUTO REPAIR	6,794	7	79	11	1
HEALTH SERVICES	1,849	2	36	5	2
TOTAL	93,395	100	750	100	1

* NUMBER OF INTERVIEWS COMPLETED DIVIDED BY TOTAL NUMBER OF ESTABLISHMENTS IN SIC GROUP

** LESS THAN 0.5%
COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 4

INDUSTRY CLASSIFICATION UNIVERSE VS SAMPLE

ONTARIO

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	2,602	3	23	2	1
FORESTRY/LUMBER/ PAPER PRODUCTS	2,394	2	66	7	3
METAL MINING	379	**	10	1	3
COAL/OIL/GAS	174	**	6	1	3
OTHER MINERAL MINING	192	**	7	1	4
FOOD MANUFACTURING	1,111	1	44	5	4
TEXTILE/PRINTING/ LEATHER PRODUCTS	3,605	4	56	6	2
CHEMICALS AND ALLIED PRODUCTS	828	1	70	8	8
OIL/COAL/RUBBER PRODUCTS	943	1	84	9	9
STONE/CLAY/GLASS PRODUCTS	820	1	19	2	2
PRIMARY METAL FABRICATION	2,880	3	85	9	3
MACHINERY/TRANSPORTATION EQUIPMENT	5,123	5	72	8	1
LOCAL AND AIR TRANSPORTATION	955	1	61	7	6
TRUCKING & WAREHOUSING	4,793	5	88	10	2
PIPELINE/ELECTRIC/GAS SERVICES	462	**	8	1	2
WHOLESALE TRADE	20,723	21	60	6	.3
AUTO DEALERS/SERVICE STATIONS	6,242	6	11	1	.2
MISC. RETAIL & REPAIR	15,951	16	27	3	.2
PERSONAL & BUSINESS SERVICES	18,785	19	60	7	.3
AUTO REPAIR	6,733	7	47	5	.7
HEALTH SERVICES	1,394	1	15	2	1
TOTAL	97,089	100	919	100	1

* NUMBER OF INTERVIEWS COMPLETED DIVIDED BY TOTAL NUMBER OF ESTABLISHMENTS IN SIC GROUP

** LESS THAN 0.5%

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 5

INDUSTRY CLASSIFICATION UNIVERSE VS SAMPLE

QUEBEC

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	2,205	3	27	6	1
FORESTRY/LUMBER/ PAPER PRODUCTS	3,517	5	12	2	.3
METAL MINING	131	**	3	1	2
COAL/OIL/GAS	62	**	-	-	-
OTHER MINERAL MINING	139	**	4	1	3
FOOD MANUFACTURING	902	1	13	3	1
TEXTILE/PRINTING/ LEATHER PRODUCTS	2,580	3	27	6	1
CHEMICALS AND ALLIED PRODUCTS	488	1	12	2	2
OIL/COAL/RUBBER PRODUCTS	426	1	18	4	4
STONE/CLAY/GLASS PRODUCTS	541	1	25	5	5
PRIMARY METAL FABRICATION	1,167	2	38	8	3
MACHINERY/TRANSPORTATION EQUIPMENT	2,180	3	17	4	1
LOCAL AND AIR TRANSPORTATION	1,045	1	50	10	5
TRUCKING & WAREHOUSING	5,548	7	50	10	1
PIPELINE/ELECTRIC/GAS SERVICES	413	1	21	4	5
WHOLESALE TRADE	14,597	19	60	12	.4
AUTO DEALERS/SERVICE STATIONS	6,242	8	35	7	1
MISC. RETAIL & REPAIR	13,588	18	2	**	**
PERSONAL & BUSINESS SERVICES	12,715	17	16	3	.1
AUTO REPAIR	5,936	8	52	11	1
HEALTH SERVICES	1,141	2	1	**	**
TOTAL	75,563	100	483	100	.6

* NUMBER OF INTERVIEWS COMPLETED DIVIDED BY TOTAL NUMBER OF ESTABLISHMENTS IN SIC GROUP

** LESS THAN 0.5%
NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 6

INDUSTRY CLASSIFICATION UNIVERSE VS. SAMPLE

EAST

	UNIVERSE #	UNIVERSE %	SAMPLE #	SAMPLE %	% OF SIC* UNIVERSE SAMPLED
AGRICULTURE	742	4	10	4	1
FORESTRY/LUMBER/ PAPER PRODUCTS	1,104	5	12	5	1
METAL MINING	25	**	3	1	12
COAL/OIL/GAS	46	**	4	2	9
OTHER MINERAL MINING	47	**	6	3	13
FOOD MANUFACTURING	461	2	26	11	6
TEXTILE/PRINTING/ LEATHER PRODUCTS	403	2	9	4	2
CHEMICALS AND ALLIED PRODUCTS	58	**	9	4	16
OIL/COAL/RUBBER PRODUCTS	57	**	3	1	5
STONE/CLAY/GLASS PRODUCTS	158	1	4	2	3
PRIMARY METAL FABRICATION	186	1	13	5	7
MACHINERY/TRANSPORTATION EQUIPMENT	415	2	6	3	1
LOCAL AND AIR TRANSPORTATION	297	1	19	8	6
TRUCKING & WAREHOUSING	1,828	9	22	9	1
PIPELINE/ELECTRIC/GAS SERVICES	77	**	1	**	1
WHOLESALE TRADE	2,982	15	17	7	1
AUTO DEALERS/SERVICE STATIONS	2,529	13	19	8	1
MISC. RETAIL & REPAIR	4,109	20	14	6	.3
PERSONAL & BUSINESS SERVICES	2,734	14	18	8	1
AUTO REPAIR	1,379	7	19	8	1
HEALTH SERVICES	477	2	7	3	1
TOTAL	20,114	100	241	100	1

* NUMBER OF INTERVIEWS COMPLETED DIVIDED BY TOTAL NUMBER OF ESTABLISHEMNTS IN SIC GROUP

** LESS THAN 0.5%
NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

3.0 RESEARCH FINDINGS

3.1 LOCATION FOR ENVIRONMENTAL DECISION MAKING

3.1.1 COMPANY SIZE

As would be expected, companies with 50 or more employees tended to have substantially more business locations than did companies with less than 50 employees (5.3 versus 1.6 respectively). This is also true when we consider the number of business locations that produce harmful materials (3.3 locations for 50 plus versus 1.4 locations for less than 50 employees). Harmful materials were described in the questionnaire as follows; "that is any raw material input, manufacturing process or by product and final product that uses or produces substances that could cause air, water, or solid waste pollution".

(Reference: Table 7)

3.1.2 REGIONAL DIFFERENCES

In terms of regional differences, companies surveyed in Alberta had the highest average number of locations of any province. In fact, Alberta based companies with fewer than 50 employees had on average 5.6 locations (the highest average of any province and employee grouping). Ontario and Quebec based companies both had on average about four locations in both employee size groups.

When considering the bottom half of Table 8, the data should be read in the following manner, using Alberta as an example. Under the first column, the Western region, companies in Alberta had on average 6.3 locations. Companies with head offices in Alberta also had on average 1.3 locations in Ontario, 2.0 locations in Quebec and 4.5 locations in the Eastern region. Overall, Alberta based companies had on average 5.2 business locations.

(Reference: Table 8)

3.1.3 INDUSTRY SECTOR

Companies in the coal/oil/gas extraction sector have the highest average number of business locations (5.7, which explains the Alberta average mentioned above), followed by food manufacturing (5.4), stone/clay/glass products (5.0) and metal mining (4.3). A slightly different ranking of industry sectors can be noted for the average number producing harmful materials. (Coal/oil/gas at 4.7, metal mining at 4.7, food manufacturing at 3.8 and stone/clay/glass products at 2.4.)

If we take the average number of business locations and multiply that by the actual number of companies surveyed, we can determine a projected number of actual business locations (for the companies surveyed). The same operation can be done to obtain a projected actual number of business locations producing harmful materials. This then allows us to calculate the percentage of business locations in each industry sector that are producing harmful materials.

As Table 10 shows, this percentage ranges from a high of 100% for Automotive repair companies (in other words all locations produce harmful materials), through to a low of 48% in the Stone/Clay/Glass Products sector. Obviously in many sectors, companies have a number of different locations serving different functions. For example there may be a head office location or a distribution centre separate from the plant.

(Reference: Tables 9,10)

3.1.4 WHERE POLLUTION CONTROL EXPENDITURE DECISIONS ARE MADE

Those companies that had more than one business location were asked to indicate where decision making regarding pollution control issues and expenditures is made. It should be noted that the vast majority of Canadian businesses are single location companies, and this is reflected in the data.

The data clearly shows that these types of decisions are made in Canada (most likely by Canadian managers). Nearly six in ten businesses indicated that these types of decisions were made at their Canadian head office, while a further 36% indicated they were made at the local level. Only five percent of all companies surveyed indicated that these types of decisions were made at the international head office.

Interestingly, the companies located in Quebec and the eastern region tended to have the most local decision making ability (virtually half the companies in each region), while companies located in the western region tended to have to refer decisions to head office (70%).

(Reference: Tables 11,12)

TABLE 7

AVERAGE NUMBER OF COMPANY LOCATIONS; TOTAL/PRODUCING HARMFUL MATERIALS/PROVINCE

	COMPANY SIZE		
TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	77	23	109
	1837 %	556 %	2393 %
AVERAGE NUMBER OF LOCATIONS			
	1.6	5.3	2.5
AVERAGE NUMBER OF LOCATIONS PRODUCING HARMFUL MATERIALS			
	1.4	3.3	1.8
AVERAGE NUMBER OF LOCATIONS BY PROVINCE			
NEWFOUNDLAND	2.0	4.4	3.5
P.E.I	-	2.0	2.0
NOVA SCOTIA	2.9	1.5	2.1
NEW BRUNSWICK	2.4	1.7	1.9
QUEBEC	3.8	3.9	3.9
ONTARIO	3.7	4.0	3.9
MANITOBA	2.2	2.9	2.6
SASKATCHEWAN	2.6	2.6	2.6
ALBERTA	5.6	4.8	5.2
BRITISH COLUMBIA	2.7	2.4	2.5
YUKON/NWT	1.0	1.0	1.0

TABLE 8

AVERAGE NUMBER OF COMPANY LOCATIONS; TOTAL/PRODUCING HARMFUL MATERIALS/PROVINCE

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	31	38	20	10	100
	750 %	919 %	483 %	241 %	2393 %
AVERAGE NUMBER OF LOCATIONS					
	2.5	2.7	2.0	2.3	2.5
AVERAGE NUMBER OF LOCATIONS PRODUCING HARMFUL MATERIALS					
	2.0	1.9	1.6	1.8	1.8

AVERAGE NUMBER OF LOCATIONS BY PROVINCE					
NEWFOUNDLAND	1.3	1.4	1.0	6.6	3.5
P.E.I.	-	-	-	2.0	2.0
NOVA SCOTIA	1.3	1.4	1.0	6.6	3.5
NEW BRUNSWICK	1.0	1.2	1.3	2.8	1.9
QUEBEC	1.5	3.6	4.4	4.0	3.9
ONTARIO	1.7	4.0	3.6	4.6	3.9
MANITOBA	3.3	1.7	1.0	4.5	2.6
SASKATCHEWAN	3.0	1.1	1.0	2.8	2.6
ALBERTA	6.3	1.3	2.0	4.5	5.2
BRITISH COLUMBIA	2.9	1.5	2.3	4.7	2.5
YUKON/NWT	2.0	2.0	-	1.5	1.0

TABLE 9

AVERAGE NUMBER OF COMPANY LOCATIONS

MAJOR SIC GROUPINGS

	AVERAGE NUMBER OF BUSINESS LOCATIONS	AVERAGE NUMBER PRODUCING HARMFUL MATERIALS
AGRICULTURE	1.5	1.4
FORESTRY/LUMBER/PAPER	1.5	1.3
METAL MINING	4.3	3.1
COAL/OIL/GAS	5.7	4.7
OTHER MINING	2.7	1.9
FOOD MANUFACTURING	5.4	3.8
TEXTILE/PRINTING/LEATHER	1.3	1.2
CHEMICALS	2.6	1.6
OIL/COAL/RUBBER PRODUCTS	1.9	1.3
STONE/CLAY/GLASS PROD.	5.0	2.4
PRIMARY METAL FABRIC.	2.4	1.5
MACH./TRANSPORT EQUIP.	1.6	1.2
LOCAL/AIR TRANSPORT	1.4	1.2
TRUCKING & WAREHOUSING	2.7	1.6
PIPELINE/ELECTRIC/GAS	4.2	3.7
WHOLESALE TRADE	2.6	2.1
AUTO DEALERS/SERVICE STATIONS	2.6	2.5
MISCELL. RETAIL & REPAIR	1.6	1.5
PERSONAL & BUSINESS SERV.	3.0	1.6
AUTO REPAIR	1.1	1.1
HEALTH SERVICES	1.8	1.6

TABLE 10

PROJECTED NUMBER OF COMPANY LOCATIONS

MAJOR SIC GROUPINGS

	PROJECTED NUMBER OF LOCATIONS	PROJECTED NUMBER PRODUCING HARMFUL MATERIALS	PERCENT OF ACTUAL COMPANIES PRODUCING HARMFUL MATERIALS
AGRICULTURE	122	113	93
FORESTRY/LUMBER/PAPER	228	198	87
METAL MINING	138	99	72
COAL/OIL/GAS	524	432	82
OTHER MINING	76	53	70
FOOD MANUFACTURING	529	372	70
TEXTILE/PRINTING/LEATHER	143	132	92
CHEMICALS	296	182	61
OIL/COAL/RUBBER PRODUCTS	281	192	68
STONE/CLAY/GLAS PRODUCTS	310	149	48
PRIMARY METAL FABRIC	396	248	63
MACH./TRANSPORT EQUIP.	200	150	75
LOCAL/AIR TRANSPORT	225	193	86
TRUCKING & WAREHOUSING	616	365	59
PIPELINE/ELECTRIC/GAS	185	163	88
WHOLESALE TRADE	572	462	81
AUTO DEALERS/SERVICE STATIONS	244	235	96
MISCELL. RETAIL & REPAIR	94	88	94
PERSONAL & BUSINESS SERV.	372	198	53
AUTO REPAIR	218	218	100
HEALTH SERVICES	106	94	89

**NOTE: PROJECTIONS BASED ON MULTIPLYING ACTUAL NUMBER OF COMPANIES SURVEYED BY AVERAGE NUMBER SHOWN IN TABLE 9

TABLE 11

LOCATION WHERE FINAL DECISION ON POLLUTION CONTROL PROCEDURES ARE MADE

COMPANY SIZE

COMP. THAT HAVE MORE THAN 1 LOCATION THAT PRODUCE HARMFUL MATERIAL	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	14	86	100
	39 %	235 %	274 %
LOCAL DECISION	39	35	36
CDN HEAD OFFICE	49	60	58
INTERNATIONAL HEAD OFFICE	8	4	5
NOT STATED	5	1	1

TABLE 12

LOCATION WHERE FINAL DECISION ON POLLUTION CONTROL PROCEDURES ARE MADE

REGIONS

COMP. THAT HAVE MORE THAN 1 LOCATION THAT PRODUCE HARMFUL MATERIAL	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	24	50	18	8	100
	66 %	136 %	49 %	23 %	274 %
LOCAL DECISION	26	34	49	48	36
CDN HEAD OFFICE	70	59	47	48	58
INTERNATIONAL HEAD OFFICE	5	6	2	4	5
NOT STATED	-	1	2	-	1

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

3.2 TYPES OF POLLUTION

Without a doubt, the most serious pollution problem currently facing Canadian business concerns the disposal of solid waste. Better than three quarters of all businesses surveyed stated that they are dealing with solid waste disposal. Slightly more than half of Canadian business is faced with an air pollution control situation; while a quarter are dealing with water pollution. Land management practices are a concern to only one in ten businesses.

3.2.1 COMPANY SIZE

Amongst the less than 50 employee businesses, solid waste is by far the most common environmental problem (mentioned by 80%). Air pollution is a concern for about half of the smaller companies, while only 17% claim they have to deal with a water pollution problem.

A somewhat different picture is apparent with the larger businesses, where solid waste is less of a problem (mentioned by 71%). Again slightly more than half of the larger companies are faced with an air pollution problem, while a similar proportion are dealing with water pollution. Almost one in five of the larger companies are engaged in some type of land management practice.

3.2.2 REGIONAL DIFFERENCES

Considering the results on a regional level (regardless of company employee size), there are few differences to be noted. Fewer companies in Quebec, than might have been expected mention having to deal with solid waste (69%), although a higher proportion mention having an air pollution problem (58%). A higher percentage of companies in Ontario (31%) mentioned having a water pollution problem than did companies in any other region.

3.2.3 INDUSTRY SECTOR

Turning now to the industry sectors, it is not surprising which industries stand out in each of the four pollution categories. For example, the industry sectors that had the highest level of mention for air pollution problems were; "Other" mining (79%), Auto repair (76%), Trucking and warehousing (74%) and Stone/clay/glass products (68%).

Industries reporting the highest level of water pollution problems included; Metal mining (69%), Food manufacturing (61%), "Other" mining (57%), and Personal and business services (48% which includes sectors such as dry cleaners, laundering services, photographic labs, and funeral parlours).

The highest levels of solid waste pollution was reported by; Auto dealers and service stations (93%), Miscellaneous retail repair (92%), Machinery and transportation equipment (92%) and Chemicals and allied products (90%). As might be expected, the agricultural sector reported the highest level by far (66%) engaging in land management practices, followed by; Metal mining (41%), "Other" mining (29%) and Coal/oil/gas extraction (23%).

(Reference: Tables 13,14,15)

NOTE: As shown on Table 13, the column percentages add to more than 100%. This is due to **multiple mentions**, meaning that an individual respondent may have indicated that they had more than one of the pollution problems listed. For example, a company may have stated that they have both solid waste and water pollution problems and thus would have been counted once in each category.

TABLE 13

TYPE OF POLLUTION COMPANIES DEALING WITH

COMPANY SIZE

TOTAL RESPONDENTS	LESS THAN 50 EMPLOYEES	50 EMPLOYEES OR MORE	TOTAL SAMPLE
HORIZONTAL %	77	23	100
	1837 %	556 5	2393 %
AIR POLLUTION	51	53	51
WATER POLLUTION	17	51	25
SOLID WASTE	80	71	78
LAND MANAGEMENT	7	18	9

NOTE: MULTIPLE MENTIONS

TABLE 14

TYPE OF POLLUTION COMPANIES DEALING WITH

REGIONS

	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	31	38	20	10	100
	750 %	919 %	483 %	241 %	2393 %
AIR POLLUTION	53	48	58	47	51
WATER POLLUTION	20	31	23	26	25
SOLID WASTE	81	80	69	76	78
LAND MANAGMENT	9	10	8	10	9

NOTE: MULTIPLE MENTIONS

TABLE 15

TYPES OF POLLUTION COMPANIES DEALING WITH

MAJOR SIC GROUPINGS

PERCENTAGE OF COMPANIES WITH POLLUTION TYPE ...	AIR	WATER	SOLID WASTE	LAND MANAGEMENT
	%	%	%	%
TOTAL COMPANIES	51	25	78	9
AGRICULTURE	39	34	75	66
FORESTRY/LUMBER/PAPER	46	13	87	16
METAL MINING	41	69	47	41
COAL/OIL/GAS	57	33	72	23
OTHER MINING	79	57	64	29
FOOD MANUFACTURING	29	61	71	17
TEXTILE/PRINTING/LEATHER	25	42	90	4
CHEMICALS	47	44	88	7
OIL/COAL/RUBBER PRODUCTS	33	25	83	8
STONE/CLAY/GLASS PROD.	68	44	74	13
PRIMARY METAL FABRIC.	60	27	84	5
MACH./TRANSPORT EQUIP.	52	24	92	4
LOCAL/AIR TRANSPORT	60	11	70	1
TRUCKING & WAREHOUSING	74	10	57	4
PIPELINE/ELECTRIC/GAS	25	18	75	11
WHOLESALE TRADE	60	21	73	9
AUTO DEALERS/SERVICE STAT.	16	17	93	3
MISCELL. RETAIL & REPAIR	66	7	92	3
PERSONAL & BUSINESS SERV.	37	48	78	1
AUTO REPAIR	76	6	74	1
HEALTH SERVICES	25	17	93	2

NOTE: MULTIPLE MENTIONS

3.3 TYPES OF POLLUTION EQUIPMENT INSTALLED

3.3.1 AIR POLLUTION EQUIPMENT

3.3.1.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

Businesses that indicated that they were dealing with an air pollution concern were asked to indicate the types of equipment ~~currently installed, as well as the types they will be~~ installing before the end of 1993 and 1999. Considering first air pollution equipment installed at companies with less than 50 employees, the most frequently mentioned type of equipment is; air handling (41%), fabric filters (39%) and catalytic converters (21%).

(Reference: Table 16)

As an overall observation, the data resulting from the future oriented questions tended to result in a high level of "uncommitted" responses (eg. business stating that they don't know what they will be installing). A large percentage of businesses also indicated that they would not be installing any of the listed equipment in future years. For some of the companies this may be due to the fact that they already have installed the needed equipment, while for others it may be that they do not anticipate the need (given current regulations or operating conditions).

However, it is likely that this high level of noncommittal is due to uncertainty about changes to environmental regulations in the future. Thus, although the data would indicate that business in general will be spending less in the future on pollution control equipment, it would be reasonable to assume that this will not be the case given the ever increasing pressure from the public for environmental controls. Another factor that would affect future expenditures is the on going improvements made by the scientific community to measure, monitor and assess the effect of pollution and contaminates.

3.3.1.2 COMPANIES WITH 50 OR MORE EMPLOYEES

The most frequently mentioned air pollution equipment installed at companies with 50 or more employees are; dust collectors (59%), air handling equipment (42%), and fabric filters (41%). On a regional basis, the same types of equipment are most frequently mentioned as being currently installed.

(Reference: Table 17-21)

3.3.1.3 INDUSTRY SECTOR

Looking now only at those industry sectors with the highest level of reported air pollution problems, it becomes clear which sectors are driving the figures reported above. For example, 73% of the companies in the auto repair sector reported having fabric filters installed, and 56% have air handling equipment installed. In the stone/clay/glass product and "other" mining sectors, 74% and 64% respectively reported having dust collectors installed. Forty-one percent of companies in the "other" mining sector also reported having air handling equipment installed.

(Reference: Table 22)

TABLE 16

AIR POLLUTION

COMPANIES WITH LESS THAN 50 EMPLOYEES

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH < 50 EMP. WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	930 %	930 %	930 %
AB/ADSORPTION SYSTEMS	7	10	11
AIR HANDLING EQUIPMENT	41	52	59
CATALYTIC CONVERTERS	21	28	32
CHEMICAL RECOVERY SYSTEMS	7	9	10
COMPUTER SOFT/HARDWARE	17	17	18
DUST COLLECTORS	20	25	28
ELECTROSTATIC PRECIPITATORS	2	2	2
FABRIC FILTERS	39	48	54
INCINERATORS	2	2	3
SCRUBBERS-DRY	3	4	5
SCRUBBERS-WET	2	3	4
ALL OF ABOVE	-	**	1
DOES NOT KNOW	-	10	12
NOT ANSWERED	1	2	15
NONE OF ABOVE	12	59	49

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 17

AIR POLLUTION

COMPANIES WITH MORE THAN 50 EMPLOYEES

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH 50-PLUS EMP. WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	295 %	295 %	295 %
AB/ADSORPTION SYSTEMS	14	21	25
AIR HANDLING EQUIPMENT	42	57	66
CATALYTIC CONVERTERS	9	17	22
CHEMICAL RECOVERY SYSTEM	15	23	28
COMPUTER SOFT/HARDWARE	12	20	25
DUST COLLECTORS	59	74	83
ELECTROSTATIC PRECIPITATORS	10	14	17
FABRIC FILTERS	41	52	56
INCINERATORS	10	16	20
SCRUBBERS - DRY	4	9	12
SCRUBBERS - WET	15	23	27
ALL OF ABOVE	1	-	-
DOES NOT KNOW	**	**	**
NOT ANSWERED	2	33	26
NONE OF ABOVE	9	24	17

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 18

AIR POLLUTION

WESTERN REGION

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN WEST WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 5 YEARS	INSTALL IN NEXT 10 YEARS
	397 %	397 %	397 %
AB/ADSORPTION SYSTEMS	6	8	14
AIR HANDLING EQUIPMENT	43	51	94
CATALYTIC CONVERTERS	20	25	45
CHEMICAL RECOVERY SYSTEMS	7	9	16
COMPUTER SOFT/HARDWARE	4	7	11
DUST COLLECTORS	20	23	43
ELECTROSTATIC PRECIPITATORS	3	5	8
FABRIC FILTERS	37	41	78
INCINERATORS	6	8	14
SCRUBBERS-DRY	5	8	13
SCRUBBERS-WET	3	5	8
ALL OF ABOVE	1	**	1
DOES NOT KNOW	-	10	-
NOT ANSWERED	1	9	1
NONE OF ABOVE	17	62	17

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 19

AIR POLLUTION

ONTARIO

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN ONTARIO WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	437 %	437 %	437 %
AB/ADSORPTION SYSTEMS	12	16	28
AIR HANDLING EQUIPMENT	46	57	100
CATALYTIC CONVERTERS	16	21	37
CHEMICAL RECOVERY SYSTEMS	12	18	30
COMPUTER SOFT/HARDWARE	6	9	15
DUST COLLECTORS	39	48	87
ELECTROSTATIC PRECIPITATORS	7	9	16
FABRIC FILTERS	43	48	91
INCINERATORS	3	5	8
SCRUBBERS-DRY	2	4	6
SCRUBBERS-WET	9	13	22
ALL OF ABOVE	**	-	**
DOES NOT KNOW	**	5	**
NOT ANSWERED	1	12	1
NONE OF ABOVE	7	56	7

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 20

AIR POLLUTION

QUEBEC

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN QUEBEC WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	280 %	280 %	280 %
AB/ADSORPTION SYSTEMS	7	12	19
AIR HANDLING EQUIPMENT	30	50	80
CATALYTIC CONVERTERS	18	36	54
CHEMICAL RECOVERY SYSTEMS	4	5	9
COMPUTER SOFT/HARDWARE	1	2	3
DUST COLLECTORS	30	44	72
ELECTROSTATIC PRECIPITATORS	1	2	3
FABRIC FILTERS	41	68	100
INCINERATORS	7	7	8
SCRUBBERS-DRY	4	7	11
SCRUBBERS-WET	3	5	8
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	6	-
NOT ANSWERED	1	8	1
NONE OF ABOVE	9	20	9

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 21

AIR POLLUTION

EASTERN REGION

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN EAST WITH AIR POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	111 %	111 %	111 %
AB/ADSORPTION SYSTEMS	5	8	12
AIR HANDLING EQUIPMENT	44	50	94
CATALYTIC CONVERTERS	21	22	43
CHEMICAL RECOVERY SYSTEMS	10	14	24
COMPUTER SOFT/HARDWARE	5	5	10
DUST COLLECTORS	27	33	60
ELECTROSTATIC PRECIPITATORS	3	5	8
FABRIC FILTERS	29	32	61
INCINERATORS	3	3	6
SCRUBBERS-DRY	-	-	-
SCRUBBERS-WET	2	3	5
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	9	-
NOT ANSWERED	-	7	-
NONE OF ABOVE	18	66	18

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 22

AIR POLLUTION

SELECTED SIC GROUPS

AIR POLLUTION EQUIPMENT CURRENTLY INSTALLED

TOTAL COMPANIES IN SELECTED SIC'S WITH AIR POLLUTION EQUIPMENT	OTHER MINING	STONE CLAY GLASS	TRUCKING & WAREHOUSE	AUTO REPAIR	TOTAL SAMPLE
	22 %	42 %	168 %	149 %	1225 %
AB/ADSORPTION SYSTEMS	9	10	1	7	8
AIR HANDLING EQUIPMENT	41	29	24	56	41
CATALYTIC CONVERTERS	9	14	48	-	18
CHEMICAL RECOVERY SYSTEMS	5	5	2	4	8
COMPUTER SOFT/HARDWARE	14	7	2	-	4
DUST COLLECTORS	64	74	3	20	29
ELECTROSTATIC PRECIPITATORS	9	10	2	2	4
FABRIC FILTERS	41	43	41	73	39
INCINERATORS	5	7	1	-	4
SCRUBBERS - DRY	5	-	1	4	3
SCRUBBERS - WET	23	10	-	1	5
ALL OF ABOVE	-	-	-	-	**
DOES NOT KNOW	-	-	-	-	**
NOT ANSWERED	5	-	1	-	1
NONE OF ABOVE	9	7	11	4	12

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

3.3.2 WATER POLLUTION EQUIPMENT

3.3.2.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

Amongst the companies with less than 50 employees one, in five claim that they currently do not have any of the listed water pollution control devices installed. On average, those companies with less than 50 employees who do have some sort of water pollution control device installed mentioned 1.4 devices. The most frequently mentioned equipment are; chemical recovery systems (20%), filters (20%), sewage treatment systems (15%), gravity sedimentation systems (14%), and oil/water separation systems (14%).

(Reference: Table 23)

3.3.2.2 COMPANIES WITH 50 OR MORE EMPLOYEES

Considering now those companies with 50 or more employees who have a water pollution problem, only one in ten stated that they had none of the listed equipment currently installed. Those who did have water pollution equipment installed mentioned on average 2.5 types of equipment. The most frequently mentioned types of equipment are; gravity sedimentation systems (37%), filters (33%), oil/water separation equipment (29%), screeners/strainers (28%), and chemical feeding/mixing equipment (24%).

(Reference: Table 24)

3.3.2.3 REGIONAL DIFFERENCES

On a regional basis, companies in the Quebec and the east were much more likely to state that they currently had none of the listed equipment installed (25% and 26% respectively) than were companies in the west or Ontario (13% and 11% respectively). On average, companies in Ontario with a water pollution problem had the highest number of types of equipment installed (2.3), while Quebec based companies had the lowest (1.4). There are no major differences to be noted in the types of equipment installed by region.

(Reference: Tables 25-28)

3.3.2.4 INDUSTRY SECTOR

Considering now those industry sectors which mentioned most frequently having to deal with water pollution, we can note significant differences in the types of equipment currently installed. For example in the metal mining sector, two thirds of the companies with a water pollution problem mentioned have gravity sedimentation systems. Another third mentioned having chemical feeding/mixing equipment. In contrast, companies in the "other" mining sector tended to have filters and screens/strainers installed (38% mentioned for each). Forty-four percent also mentioned having gravity sedimentation systems.

More than half the companies in the food manufacturing sector indicated that they currently have screeners/strainers installed for water pollution control purposes, by far the highest level of mention for any industry sector. Four in ten companies in the business and personal services sector mentioned having chemical recovery systems installed, while another third stated they were currently using filters.

(Reference: Table 29)

TABLE 23

WATER POLLUTION

COMPANIES WITH LESS THAN 50 EMPLOYEES

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH <-50 EMP. WITH WATER POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	317 %	317 %	317 %
AERATION SYSTEMS	3	3	3
BIOLOGICAL TREATMENT SYSTEMS	3	4	5
CENTRIFUGES	1	2	2
CHEMICAL FEED/MIX EQUIPMENT	8	10	11
CHEMICAL RECOVERY SYSTEMS	20	26	29
COMPUTER SOFT/HARDWARE	2	2	3
FILTERS	20	23	25
GRAVITY SEDIMENTATION SYSTEMS	14	17	19
ION EXACHAGE SYSTEMS	3	3	4
OIL/WATER SEPARATION EQUIPMENT	14	17	19
POTABLE WATER TREAMENT	3	3	3
SCREENS/STRAINERS	12	13	14
SEWAGE TREATMENT SYSTEMS	15	20	23
WATER HANDLING PRODUCTS	7	8	9
WATER PURIFICATION SYSTEMS	13	18	19
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	11	17
NOT ANSWERED	1	7	10
NONE OF ABOVE	21	59	63

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 24

WATER POLLUTION

COMPANIES WITH 50 PLUS EMPLOYEES

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH 50 PLUS EMP. WITH WATER POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	286 %	286 %	286 %
AERATION SYSTEMS	9	14	18
BIOLOGICAL TREATMENT SYSTEMS	10	16	19
CENTRIFUGES	6	8	10
CHEMICAL FEED/MIX EQUIPMENT	24	34	38
CHEMICAL RECOVERY SYSTEMS	20	26	30
COMPUTER SOFT/HARDWARE	10	16	19
FILTERS	33	41	46
GRAVITY SEDIMENTATION SYSTEMS	37	44	49
ION EXACHAGE SYSTEMS	7	11	13
OIL/WATER SEPARATION EQUIPMENT	29	41	60
POTABLE WATER TREAMENT	9	10	12
SCREENS/STRAINERS	28	35	39
SEWAGE TREATMENT SYSTEMS	16	23	28
WATER HANDLING PRODUCTS	6	9	10
WATER PURIFICATION SYSTEMS	9	17	23
ALL OF ABOVE	1	**	-
DOES NOT KNOW	-	**	1
NOT ANSWERED	2	35	48
NONE OF ABOVE	11	24	30

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 25

WATER POLLUTION

WESTERN REGION

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN WEST WITH WATER POLLUTION EQUIPMENT.	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	149 %	149 %	149 %
AERATION SYSTEMS	5	8	10
BIOLOGICAL TREAT SYSTEMS	5	9	12
CENTRIFUGES	5	6	7
CHEMICAL FEED/MIX EQUIPMENT	13	15	16
CHEMICAL RECOVERY SYSTEMS	23	29	34
COMPUTER SOFT/HARDWARE	6	9	11
FILTERS	22	27	33
GRAVITY SEDIMENTATION SYSTEM	22	26	30
ION EXCHANGE SYSTEMS	6	9	10
OIL/WATER SEPARATION EQUIPMENT	19	25	32
POTABLE WATER TREATMENT	5	6	7
SCREENS/STRAINERS	17	20	23
SEWAGE TREATMENT SYSTEM	13	18	20
WATER HANDLING PRODUCTS	9	12	13
WATER PURIFICATION SYSTEMS	13	19	26
ALL OF ABOVE	1	-	-
DOES NOT KNOW	-	11	18
NOT ANSWERED	3	16	17
NONE OF ABOVE	13	50	50

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 26

WATER POLLUTION

ONTARIO

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN ONTARIO WITH WATER POLLUITON EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	281 %	281 %	281 %
AERATION SYSTEMS	6	9	12
BIOLOGICAL TREAT SYSTEMS	8	11	13
CENTRIFUGES	3	5	6
CHEMICAL FEED/MIX EQUIPMENT	21	26	29
CHEMICAL RECOVERY SYSTEMS	25	31	34
COMPUTER SOFT/HARDWARE	7	11	13
FILTERS	33	52	55
GRAVITY SEDIMENTATION SYSTEMS	27	31	34
ION EXCHANGE SYSTEMS	6	8	9
OIL/WATER SEPARATION EQUIPMENT	25	37	40
POTABLE WATER TREATMENT	6	7	8
SCREENS/STRAINERS	24	30	33
SEWAGE TREATMENT SYSTEMS	16	22	27
WATER HANDLING PRODUCTS	8	10	12
WATER PURIFICATION SYSTEMS	13	19	22
ALL OF ABOVE	1	-	-
DOES NOT KNOW	-	5	8
NOT ANSWERED	2	21	31
NONE OF ABOVE	11	39	50

NOTE: MULTIPLE MENTIONS
'** LESS THAN 0.5%

TABLE 27

WATER POLLUTION

QUEBEC

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN QUEBEC WITH WATER POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	111 %	111 %	111 %
AERATION SYSTEMS	8	9	10
BIOLOGICAL TREAT SYS.	3	7	9
CENTRIFUGES	1	2	3
CHEMICAL FEED/MIX EQUIPMENT	7	18	21
CHEMICAL RECOVERY SYSTEMS	12	17	19
COMPUTER SOFT/HARDWARE	3	5	5
FILTERS	14	17	18
GRAVITY SEDIMENTATION SYSTEMS	25	35	40
ION EXCHANGE SYSTEMS	3	5	6
OIL/WATER SEPARATION EQUIPMENT	17	19	22
POTABLE WATER TREATMENT	5	6	6
SCREENS/STRAINERS	10	13	13
SEWAGE TREATMENT SYSTEMS	22	34	40
WATER HANDLING PRODUCTS	1	1	1
WATER PURIFICATION SYSTEM	7	16	19
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	2	5
NOT ANSWERED	-	22	31
NONE OF ABOVE	25	38	52

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 28

WATER POLLUTION

EASTERN REGION

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN EAST WITH WATER POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	62 %	62 %	62 %
AERATION SYSTEMS	3	3	3
BIOLOGICAL TREAT SYS.	8	11	13
CENTRIFUGES	3	3	3
CHEMICAL FEED/MIX EQUIPMENT	11	16	16
CHEMICAL RECOVERY SYSTEMS	7	14	16
COMPUTER SOFT/HARDWARE	5	7	7
FILTERS	23	26	29
GRAVITY SEDIMENTATION SYSTEMS	27	29	31
ION EXCHANGE SYSTEMS	2	2	2
OIL/WATER SEPARATION EQUIPMENT	16	18	21
POTABLE WATER TREATMENT	10	10	12
SCREENS/STRAINERS	24	24	26
SEWAGE TREATMENT SYSTEMS	8	11	11
WATER HANDLING PRODUCTS	7	9	11
WATER PURIFICATION SYSTEMS	3	8	8
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	3	5
NOT ANSWERED	2	26	31
NONE OF ABOVE	26	47	52

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 29

WATER POLLUTION

SELECTED SIC GROUPS

WATER POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL COMPANIES IN SELECTED SIC'S GROUPS WITH WATER POLLUTION EQUIPMENT	METAL MINING	OTHER MINING	FOOD MANUFACT.	BUS. SERVICES	TOTAL SAMPLE
HORIZONTAL %	4	3	10	10	
	22 %	16 %	60 %	59 %	603 %
AERATION SYSTEMS	5	-	18	3	6
BIO. TREAT. SYSTEMS	14	13	12	3	6
CENTRIFUGES	-	6	7	-	3
CHEM. FEED/MIX EQUIP.	32	13	13	10	15
CHEM. RECOVERY SYS.	-	6	5	42	20
COMPUTER SOFT/HARD	18	13	3	3	6
FILTERS	9	38	27	32	26
GRAVITY SEDIMENTATION SYSTEMS	64	44	25	15	25
ION EXCHANGE SYS.	-	-	3	3	5
OIL/WATER SEPARATION EQUIPMENT	18	6	17	10	21
POTABLE WATER TREAT.	23	25	7	3	6
SCREENS/STRAINERS	5	38	52	25	20
SEWAGE TREAT. SYS.	27	31	18	10	15
WATER HANDLING PROD.	9	31	2	3	7
WATER PURIFICATION	27	6	8	12	11
ALL OF ABOVE	-	-	2	-	1
DOES NOT KNOW	-	-	-	-	-
NOT ANSWERED	-	-	2	2	2
NONE OF ABOVE	5	-	17	15	16

NOTE: MULTIPLE MENTIONS

3.3.3 SOLID WASTE POLLUTION EQUIPMENT

As was mentioned earlier, a large proportion of the companies surveyed indicated that they had a solid waste pollution problem. This is confirmed in the equipment data where only 7% of all companies mentioning this problem indicated that they had none of the listed equipment currently installed. Clearly then the vast majority of companies both large and small had some type of solid waste equipment currently installed.

3.3.3.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

Given this high level of solid waste equipment penetration, it is somewhat surprising to note that overall, the average number of pieces of equipment installed is only 1.7. Amongst companies with less than 50 employees, this average falls to 1.5 (versus 2.4 at companies with 50 or more employees). The most common types of solid waste equipment currently installed at companies with less than 50 employees are; solid waste collection systems (48%), liquid waste collection systems (34%), recycling systems (24%), and waste disposal systems (24%).

(Reference: Table 30)

3.3.3.2 COMPANIES WITH 50 OR MORE EMPLOYEES

Amongst companies with 50 employees or more the most frequently types of installed equipment are; solid waste collection systems (55%), liquid waste collection systems (49%), recycling systems (41%), and waste disposal systems (33%). Regionally, the same types of equipment are installed in roughly the same proportions.

(Reference: Tables 31-35)

3.3.3.3 INDUSTRY SECTOR

In terms of the industry sectors which most frequently mentioned having solid waste equipment, about two thirds of companies in the textile/printing/leather products industries, the machinery and transportation equipment sector and the miscellaneous retail and repair group mentioned having solid waste collection systems. Better than eight in ten companies in the automobile dealer and service station sector indicated that they had liquid waste collection systems installed, by far the highest level of any sector. The miscellaneous retail and repair industry would appear to be leading the way with recycling systems (mentioned by 56%).

(Reference: Tables 36)

TABLE 30

SOLID WASTE POLLUTION

COMPANIES WITH LESS THAN 50 EMPLOYEES

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH < 50 EMP. WITH SOLID WASTE POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	1463 %	1463 %	1463 %
COMPUTER SOFT/HARDWARE	1	2	2
INCINERATION	5	6	7
RECYLCING SYSTEMS/EQUIP.	24	29	33
LIQUID WASTE COLLECTION	34	44	50
SOLID WASTE COLLECTION	48	56	61
WASTE DISPOSAL SYS/EQUIP	24	28	30
WASTE HANDLING SYSTEMS/EQUIPMENT	8	10	11
WASTE SEPARATION SYSTEMS/EQUIPMENT	4	5	6
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	11	14
NOT ANSWERED	**	2	3
NONE OF ABOVE	7	65	62

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 31

SOLID WASTE POLLUTION

COMPANIES WITH 50 PLUS EMPLOYEES

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. WITH 50 PLUS EMP. WITH SOLID WASTE POLLUTION EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	393 %	393 %	393 %
COMPUTER SOFT/HARDWARE	7	12	15
INCINERATION	6	15	17
RECYLCING SYSTEMS/EQUIP.	41	59	70
LIQUID WASTE COLLECTION	49	92	99
SOLID WASTE COLLECTION	55	66	73
WASTE DISPOSAL SYS/EQUIP.	33	41	46
WASTE HANDLING SYSTEMS/EQUIPMENT	27	36	42
WASTE SEPARATION SYSTEMS/EQUIPMENT	20	30	36
ALL OF ABOVE	1	-	-
DOES NOT KNOW	-	1	1
NOT ANSWERED	3	38	32
NONE OF ABOVE	6	25	20

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 32

SOLID WASTE POLLUTION

WESTERN REGION

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN WEST WITH SOLID WASTE EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	604 %	604 %	604 %
COMPUTER SOFT/HARDWARE	3	4	5
INCINERATION	7	9	11
RECYCLING SYSTEMS/EQUIP.	25	31	35
LIQUID WASTE COLLECTION	37	43	48
SOLID WASTE COLLECTION	50	54	58
WASTE DISPOSAL SYS/EQUIP.	26	30	33
WASTE HANDLING SYSTEMS/EQUIPMENT	11	15	17
WASTE SEPARATION SYSTEMS/EQUIPMENT	5	8	10
ALL OF ABOVE	**	-	-
DOES NOT KNOW	-	12	13
NOT ANSWERED	1	7	6
NONE OF ABOVE	7	66	59

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 33

SOLID WASTE POLLUTION

ONTARIO

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN ONTARIO WITH SOLID WASTE EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	735 %	735 %	735 %
COMPUTER SOFT/HARDWARE	3	5	7
INCINERATION	4	5	5
RECYCLING SYSTEMS/EQUIP.	37	46	52
LIQUID WASTE COLLECTION	35	41	45
SOLID WASTE COLLECTION	53	57	59
WASTE DISPOSAL SYSTEM	31	34	37
WASTE HANDLING SYSTEM	14	18	21
WASTE SEPARATION SYSTEM	10	14	16
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	6	7
NOT ANSWERED	1	12	13
NONE OF ABOVE	5	61	57

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 34

SOLID WASTE POLLUTION

QUEBEC

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN QUEBEC WITH SOLID WASTE EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	335 %	335 %	335 %
COMPUTER SOFT/HARDWARE	2	4	5
INCINERATION	2	3	4
RECYCING SYSTEM/EQUIPMENT	15	24	30
LIQUID WASTE COLLECTION	51	82	100
SOLID WASTE COLLECTION	53	80	98
WASTE DISPOSAL SYSTEM	13	24	29
WASTE HANDLING SYSTEM	10	13	15
WASTE SEPARATION SYSTEM	8	10	11
ALL OF ABOVE	**	-	-
DOES NOT KNOW	-	7	14
NOT ANSWERED	1	12	11
NONE OF ABOVE	6	26	22

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 35

SOLID WASTE POLLUTION

EASTERN REGION

SOLID WASTE POLLUTION EQUIPMENT CURRENTLY INSTALLED/WILL BE INSTALLED

TOTAL CO. IN EAST WITH SOLID WASTE EQUIPMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	182 %	182 %	182 %
COMPUTER SOFT/HARDWARE	2	2	2
INCINERATION	9	11	12
RECYCLING SYSTEM/EQUIP.	23	30	34
LIQUID WASTE COLLECTION	26	29	31
SOLID WASTE COLLECTION	43	46	48
WASTE DISPOSAL SYSTEM	29	33	36
WASTE HANDLING SYSTEM	11	14	16
WASTE SEPARATION SYSTEM	5	7	8
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	7	10
NOT ANSWERED	2	10	11
NONE OF ABOVE	13	65	65

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 36

SOLID WASTE EQUIPMENT

SELECTED SIC GROUPS

SOLID WASTE EQUIPMENT CURRENTLY INSTALLED

TOTAL COMPANIES IN SELECTED SIC'S WITH SOLID WASTE EQUIPMENT	TEXTILE PRINT LEATHER	MACH. TRANSE QUIP	AUTO DEALER GAS ST.	MIS. RETAIL REPAIR	TOTAL SAMPLE
HORIZONTAL %	5	6	5	3	
	99 %	114 %	87 %	54 %	1856 %
COMPUTER SOFT/HARDWARE	1	-	1	4	2
INCINERATION	-	1	6	2	5
RECYCLING SYSTEMS/EQUIPMENT	36	14	5	56	28
LIQUID WASTE COLLECTION	27	35	83	46	38
SOLID WASTE COLLECTION	63	68	33	65	50
WASTE DISPOSAL SYSTEM/EQUIPMENT	20	14	20	54	26
WASTE HANDLING SYSTEMS/EQUIPMENT	5	8	5	20	12
WASTE SEPARATION SYSTEMS/EQUIPMENT	6	6	3	13	7
ALL OF ABOVE	-	-	-	-	**
DOES NOT KNOW	-	-	-	-	-
NOT ANSWERED	2	-	-	2	1
NONE OF ABOVE	3	-	10	9	7

NOTE: MULTIPLE MENTION
** LESS THAN 0.5%

3.3.4 LAND MANAGEMENT PRACTICES

Overall, the smallest percentage of companies surveyed practiced any type of land management, which is not all that surprising given the types of industries included in the sample. Amongst those who did practice some type of land management, two in ten indicated that they were not currently practicing any of the listed items.

3.3.4.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

The most frequently mentioned type of land management practiced by companies with less than 50 employees was organic agriculture (31%). These smaller companies also tended to practice rural land management (26%), reforestation (25%) and agricultural soil and water conservation (19%).

(Reference: Table 37)

3.3.4.2 COMPANIES WITH 50 OR MORE EMPLOYEES

In contrast, companies with 50 or more employees most frequently mentioned being engaged in pest control (23%), reforestation (19%), water resource planning (18%) and rural land management (18%).

(Reference: Table 38)

3.3.4.3 REGIONAL DIFFERENCES

On a regional basis, there are some significant differences to be noted in the types of land management being practiced. For example, in Quebec, more than half the companies indicated that they were engaged in organic agriculture, by far the highest level of any region. However, unlike companies in other provinces, no Quebec based companies mentioned practicing water resource planning.

The eastern and western regions both had high percentages of companies practicing reforestation (40% and 36% respectively). In the east, and even high percentage indicated that they were engaged in rural land management (44%), while in the west slightly less than a third of companies indicated that they were practicing either agricultural soil and water conservation or water resource planning. Nearly a quarter of all companies in Ontario who stated they were doing some type of land management indicated that they were not conducting any of the listed practices.

(Reference: Tables 39-42)

3.3.4.4 INDUSTRY SECTOR

As might be expected, companies in the agricultural sector most frequently mentioned practicing organic agriculture (62%). However, farmers were only slightly more likely to be practicing rural land management than were all the companies who indicated they were conducting land management. Interestingly, it was the metal mining sector which indicated that it was most heavily engaged in reforestation (62%), forestry conservation (31%) and water resource planning (31%).

In contrast, more than half the companies in the coal/oil/gas extraction sector were engaged in agricultural soil and water conservation efforts, while better than a third practiced reforestation, water resource planning or rural land management. The "other" mining sector is heavily involved in reforestation and rural land management. This sector has also invested most frequently in computer hardware and software for land management purposes.

(Reference: Table 43)

TABLE 37

LAND MANAGEMENT PRACTICES CURRENTLY USE/WILL USE

COMPANIES WITH LESS THAN 50 EMPLOYEES

TOTAL COMPANIES WITH < 50 EMP. WHO PRACTICE LAND MANAGEMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	126 %	126 %	126 %
COMPUTER SOFT/HARDWARE	2	2	2
AGRI SOIL/WATER CONSERVATION	19	29	36
ORGANIC AGRICULTURE	31	55	75
REFORESTATION	25	29	32
FISHERIES MANAGEMENT	3	5	6
FORESTRY CONSERVATION	13	15	16
WATER RESOURCE PLANNING	18	24	28
RURAL LAND MANAGEMENT	26	33	38
FLOOD PLAIN CONTROL	7	8	8
PEST CONTROL	16	21	25
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	8	10
NOT ANSWERED	-	8	8
NONE OF ABOVE	16	40	36

NOTE: MULTIPLE MENTIONS
-= LESS THAN 0.5%

TABLE 38

LAND MANAGEMENT PRACTICES CURRENTLY USE/WILL USE

COMPANIES WITH 50 PLUS EMPLOYEES

TOTAL COMPANIES WITH 50 PLUS EMP. WHO PRACTICE LAND MANAGEMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	99 %	99 %	99 %
COMPUTER SOFT/HARDWARE	14	21	26
AGRI SOIL/WATER CONSERVATION	13	20	25
ORGANIC AGRICULTURE	2	4	5
REFORESTATION	19	17	24
FISHERIES MANAGEMENT	11	19	23
FORESTRY CONSERVATION	12	19	25
WATER RESOURCE PLANNING	18	31	39
RURAL LAND MANAGEMENT	18	31	39
FLOOD PLAIN CONTROL	6	8	9
PEST CONTROL	23	29	33
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	-	-
NOT ANSWERED	10	40	31
NONE OF ABOVE	22	26	20

NOTE: MULTIPLE MENTIONS
* LESS THAN 0.5%

TABLE 39

LAND MANAGMENT PRACTICES CURRENTLY USE/WILL USE

WESTERN REGION

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	70 %	70 %	70 %
COMPUTER SOFT/HARDWARE	11	18	23
AGRI SOIL/WATER CONSERVATION	30	46	58
ORGANIC AGRICULTURE	14	20	25
REFORESTATION	36	45	57
FISHERIES MANAGMENT	11	20	25
FORESTRY CONSERVATION	16	23	29
5ATER RESOURCE PLANNING	31	44	56
RURAL LAND MANAGMENT	24	34	43
FLOOD PLAIN CONTROL	10	14	28
PEST CONTROL	16	20	25
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	9	2
NOT ANSWERED	4	17	6
NONE OF ABOVE	19	40	16

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 40

LAND MANAGMENT PRACTICES CURRENTLY USE/WILL USE

ONTARIO

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	91 %	91 %	91 %
COMPUTER SOFT/HARDWARE	6	8	10
AGRI SOIL/WATER CONSERVATION	11	14	16
ORGANIC AGRICULTURE	9	16	20
REFORESTATION	13	19	25
FISHERIES MANAGMENT	2	5	7
FORESTRY CONSERVATION	11	14	17
WATER RESOURCE PLANNING	17	28	35
RURAL LAND MANAGMENT	23	34	41
FLOOD PLAIN CONTROL	7	7	7
PEST CONTROL	26	34	40
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	4	5
NOT ANSWERED	7	31	27
NONE OF ABOVE	24	34	30

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 41

LAND MANAGMENT PRACTICES CURRENTLY USE/WILL USE

QUEBEC

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	39 %	39 %	39 %
COMPUTER SOFT/HARDWARE	3	3	3
AGRI SOIL/WATER CONSERVATION	8	21	32
ORGANIC AGRICULTURE	56	100	100
REFORESTATION	8	11	12
FISHERIES MANAGMENT	5	8	9
FORESTRY CONSERVATION	5	5	5
WATER RESOURCE PLANNING	-	-	-
RURAL LAND MANAGMENT	5	5	5
FLOOD PLAIN CONTROL	3	3	3
PEST CONTROL	10	15	20
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	-	-
NOT ANSWERED	-	10	11
NONE OF ABOVE	13	13	15

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 42

LAND MANAGMENT PRACTICES CURRENTLY USE/WILL USE

EASTERN REGION

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	25 %	25 %	25 %
COMPUTER SOFT/HARDWARE	8	8	8
AGRI SOIL/WATER CONSERVATION	12	12	12
ORGANIC AGRICULTURE	4	4	6
REFORESTATION	40	44	48
FISHERIES MANAGMENT	12	12	12
FORESTRY CONSERVATION	20	24	26
WATER RESOURCE PLANNING	16	20	24
RURAL LAND MANAGMENT	44	64	79
FLOOD PLAIN CONTROL	4	4	4
PEST CONTROL	16	16	16
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	-	-
NOT ANSWERED	4	24	25
NONE OF ABOVE	8	48	46

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 43

LAND MANAGEMENT PRACTICES CURRENTLY USED/WILL USE

SELECTED SIC GROUPS

TOTAL COMPANIES IN SELECTED SIC'S WHO PRACTICE LAND MANAGEMENT	AGRICULTURE	METAL MINING	COAL OIL GAS	OTHER MINING	TOTAL SAMPLE
HORIZONTAL %	24	6	9	4	
	53 %	13 %	21 %	8 %	225 %
COMPUTER HARD/SOFTWARE	2	15	29	38	7
AGRI SOIL/WATER CONSERVATION	11	-	52	38	16
ORGANIC AGRICULTURE	62	8	10	-	18
REFORESTATION	11	62	38	50	22
FISHERIES MANAGEMENT	2	8	19	38	7
FORESTRY CONSERVATION	2	31	24	25	12
WATER RESOURCE PLANNING	15	31	38	25	18
RURAL LAND MANAGEMENT	28	15	38	50	23
FLOOD PLAN CONTROL	2	15	5	-	7
PEST CONTROL	9	-	24	-	19
ALL OF ABOVE	-	-	-	-	-
DOES NOT KNOW	-	-	-	-	-
NOT ANSWERED	-	-	10	-	4
NONE OF ABOVE	2	23	5	25	19

NOTE: MULTIPLE MENTIONS

3.3.5 OTHER CHEMICAL AND MEASURING DEVICES

3.3.5.1 COMPANY SIZE

In terms of other types of pollution control equipment and supplies, there is a significant difference between large and small companies in the frequency of mention. Two thirds of all companies with less than 50 employees indicated that they had none of the listed devices or supplies currently installed. In contrast, less than a quarter of the large companies had none of these devices installed.

Amongst the larger companies, the most frequently mentioned types of equipment mentioned were; chemicals for dust control (21%), sampling systems (21%), chemicals for water treatment (20%) and chemical ab/adsorbents (17%).

(Reference: Tables 44-45)

3.3.5.2 REGIONAL DIFFERENCES

On a regional basis, almost seven in ten companies in Quebec stated that they had none of the listed equipment or supplies currently installed, a significantly higher level than any other region. Other than the generally lower level of mention for specific items seen in Quebec, there are no major differences in the frequency of mention for the various items across the four regions.

(Reference: Tables 46-49)

TABLE 44

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

COMPANIES WITH LESS THAN 50 EMPLOYEES

TOTAL COMPANIES WITH LESS THAN 50 EMPLOYEES	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	1837 %	1837 %	1837 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	9	10	11
AGGLOMERATION/PELLETIZING	1	1	2
BACTERIA/ENZYMES	1	1	2
CLEANING AGENTS	11	18	24
CORROSION/SCALE CONTROL	1	1	2
DUST CONTROL	4	5	6
WATER TREATMENT	3	4	4
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTRUMENTS	4	5	6
GRD WATER INSTRUMENTS	1	2	2
WATER QUAL. INSTRUMENTS	3	4	5
SAMPLING SYSTEMS	7	9	10
COMBUSTION CONTROLS	1	1	1
COMPUTER CONTROLS	1	1	2
PROCESS CONTROLS	1	2	1
SENSORS	6	7	7
DATA ACQUISITION EQUIP	1	1	1
ELECTRICAL CONTROL EQUIP	2	2	2

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 44 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

COMPANIES WITH LESS THAN 50 EMPLOYEES

TOTAL COMPANIES WITH LESS THAN 50 EMPLOYEES	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	1837 %	1837 %	1837 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTRUMENTS	2	3	4
BACTERIOLOGICAL SUPPLIES	9	9	9
CALIBRATION EQUIPMENT	1	1	1
ENVIRONMENTAL CHAMBERS	**	**	1
LABORATORY CHEMICALS	1	2	3
LAB DATA ACQUISITION SYSTEMS	1	2	2
LABORATORY EQUIPMENT	1	2	3
LAB REAGENTS & SUPPLIES	1	1	1
ALL OF ABOVE	**	-	-
DOES NOT KNOW	**	7	8
NOT ANSWERED	1	3	3
NONE OF ABOVE	65	76	72

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 45

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

COMPANIES WITH 50 PLUS EMPLOYEES

TOTAL COMPANIES WITH 50 PLUS EMPLOYEES	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	556 %	556 %	556 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	17	23	25
AGGLOMERATION/PELLETIZING	4	6	7
BACTERIA/ENZYMES	3	5	6
CLEANING AGENTS	15	20	23
CORROSION/SCALE CONTROL	14	18	20
DUST CONTROL	21	26	29
WATER TREATMENT	20	27	31
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTRUMENTS	14	22	26
GRD WATER INSTRUMENTS	6	10	12
WATER QUALITY INSTRUMENTS	15	21	24
SAMPLING SYSTEMS	21	28	32
COMBUSTION CONTROLS	12	16	19
COMPUTER CONTROLS	8	14	17
PROCESS CONTROLS	15	20	23
SENSORS	15	21	24
DATA ACQUISITION EQUIP	8	12	14
ELECTRICAL CONTROL EQUIP	13	18	20

NOTE: MULTIPLE MENTIONS

TABLE 45 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

COMPANIES WITH 50 PLUS EMPLOYEES

TOTAL COMPANIES WITH 50 PLUS EMPLOYEES	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	556 %	556 %	556 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTRUMENTS	15	20	23
BACTERIOLOGICAL SUPPLIES	3	3	4
CALIBRATION EQUIPMENT	10	13	15
ENVIRONMENTAL CHAMBERS	3	4	5
LABORATORY CHEMICALS	13	17	19
LAB DATA ACQUISITION SYSTEMS	5	7	8
LABORATORY EQUIPMENT	13	17	19
LAB REAGENTS & SUPPLIES	11	14	16
ALL OF ABOVE	1	**	**
DOES NOT KNOW	**	1	1
NOT ANSWERED	12	35	23
NONE OF ABOVE	23	31	19

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 46

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

WESTERN REGION

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	750 %	750 %	750 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	14	16	17
AGGLOMERATION/PELLETIZING	1	2	2
BACTERIA/ENZYMES	2	3	4
CLEANING AGENTS	14	22	28
CORROSION/SCALE CONTROL	3	4	5
DUST CONTROL	5	7	9
WATER TREATMENT	5	7	8
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTRUMENTS	7	7	8
GROUND WATER INSTRUMENTS	3	5	6
WATER QUALITY INSTRUMENTS	5	7	8
SAMPLING SYSTEMS	13	16	18
COMBUSTION CONTROLS	3	4	5
COMPUTER CONTROLS	3	5	6
PROCESS CONTROLS	4	6	7
SENSORS	10	13	15
DATA AQUISITION EQUIPMENT	2	3	4
ELECTRICAL CONTROL EQUIPMENT	3	5	6

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 46 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

WESTERN REGION

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	750 %	750 %	750 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTR.	3	4	5
BACTERIOLOGICAL SUPPLIERS	1	2	3
CALIBRATION EQUIPMENT	2	4	5
ENVIRONMENTAL CHAMBERS	**	**	1
LABORATORY CHEMICALS	2	4	5
LAB DATA AQUISITION SYSTEMS	2	3	4
LAB EQUIPMENT	2	4	5
LAB REAGENTS/SUPPLIES	2	3	4
ALL OF ABOVE	**	-	-
DOES NOT KNOW	**	10	9
NOT ANSWERED	2	7	6
NONE OF ABOVE	56	67	53

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 47

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/ WILL BE INSTALLED

ONTARIO

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	919 %	919 %	919 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	12	14	16
AGGLOMERATION/PELLETIZING	2	3	3
BACTERIA/ENZYMES	2	3	3
CLEANING AGENTS	13	18	21
CORROSION/SCALE CONTROL	6	7	8
DUST CONTROL	12	15	17
WATER TREATMENT	11	14	16
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTRUMENTS	9	14	17
GROUND WATER INSTRUMENTS	2	3	4
WATER QUALITY INSTRUMENTS	9	12	14
SAMPLING SYSTEMS	10	13	15
COMBUSTION CONTROLS	5	7	8
COMPUTER CONTROLS	4	6	7
PROCESS CONTROLS	6	8	9
SENSORS	9	11	12
DATA AQUISITION EQUIP.	3	4	5
ELECTRICAL CONTROL EQUIP.	6	7	8

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 47 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/ WILL BE INSTALLED

ONTARIO

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	919 %	919 %	919 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTRUMENTS	8	10	12
BACTERIOLOGICAL SUPPLIES	2	2	2
CALIBRATION EQUIPMENT	5	6	7
ENVIRONMENTAL CHAMBERS	2	2	3
LABORATORY CHEMICALS	7	9	10
LAB DATA AQUISITION SYSTEMS	2	3	4
LAB EQUIPMENT	6	8	9
LAB REAGENTS/SUPPLIES	6	7	8
ALL OF ABOVE	**	**	**
DOES NOT KNOW	**	5	5
NOT ANSWERED	4	13	12
NONE OF ABOVE	50	63	51

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 48

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

QUEBEC

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	483 %	483 %	483 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	5	7	9
AGGLOMERATION/PELLETIZING	1	1	1
BACTERIA/ENZYMES	**	**	1
CLEANING AGENTS	5	10	15
CORROSION/SCALE CONTROL	3	5	6
DUST CONTROL	5	6	7
WATER TREATMENT	4	6	7
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTR.	3	5	6
GROUND WATER INSTR.	1	2	3
WATER QUALITY INSTR.	2	3	4
SAMPLING SYSTEMS	5	9	12
COMBUSTION CONTROLS	2	3	3
COMPUTER CONTROLS	1	2	2
PROCESS CONTROLS	2	3	4
SENSORS	4	5	6
DATA AQUISITION EQUIP.	2	3	4
ELECTRICAL CONTROL EQUIP.	3	4	5

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 48 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

QUEBEC

	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	483 %	483 %	483 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTRUMENTS	2	3	3
BACTERIOLOGICAL SUPPLIES	1	1	1
CALIBRATION EQUIPMENT	1	1	1
ENVIRONMENTAL CHAMBERS	1	1	1
LABORATORY CHEMICALS	2	2	3
LAB DATA AQUISITION SYSTEMS	1	1	1
LAB EQUIPMENT	1	2	3
LAB REAGENTS/SUPPLIES	2	2	2
ALL OF ABOVE	-	-	-
DOES NOT KNOW	**	2	2
NOT ANSWERED	5	13	11
NONE OF ABOVE	67	68	65

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 49

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/WILL BE INSTALLED

EASTERN REGION

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	241 %	241 %	241 %
CHEMICALS FOR POLLUTION CONTROL			
AB/ADSORBENTS	8	8	9
AGGLOMERATION/PELLETIZING	-	-	**
BACTERIA/ENZYMES	3	4	5
CLEANING AGENTS	14	22	28
CORROSION/SCALE CONTROL	4	4	4
DUST CONTROL	8	10	11
WATER TREATMENT	7	9	10
MEASURING/MONITORING EQUIPMENT			
AIR QUALITY INSTR.	5	7	8
GROUND WATER INSTR.	5	6	7
WATER QUALITY INSTR.	5	6	7
SAMPLING SYSTEMS	11	13	15
COMBUSTION CONTROLS	3	3	3
COMPUTER CONTROLS	3	3	3
PROCESS CONTROLS	3	3	4
SENSORS	10	10	10
DATA AQUISITION EQUIPMENT	2	2	2
ELECTRICAL CONTROL EQUIPMENT	2	2	2

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 49 CONTINUED

OTHER CHEMICAL OR MEASURING DEVICES CURRENTLY INSTALLED/ WILL BE INSTALLED

EASTERN REGION

TOTAL COMPANIES WHO PRACTICE LAND MANAGMENT	CURRENTLY HAVE INSTALLED	INSTALL IN NEXT 3 YEARS	INSTALL IN NEXT 10 YEARS
	241 %	241 %	241 %
SCIENTIFIC RESEARCH AND LABS			
ANALYTICAL INSTRUMENTS	4	5	6
BACTERIOLOGICAL SUPPLIERS	1	1	1
CALIBRATION EQUIPMENT	3	3	4
ENVIRONMENTAL CHAMBERS	-	-	-
LABORATORY CHEMICALS	3	5	7
LAB DATA AQUISITON SYSTEMS	**	**	**
LAB EQUIPMENT	1	1	1
LAB REAGENTS/SUPPLIES	1	1	1
ALL OF ABOVE	-	-	-
DOES NOT KNOW	-	4	5
NOT ANSWERED	4	12	12
NONE OF ABOVE	53	68	64

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

4.0 POLLUTION CONTROL EXPENDITURES

The key component of this research survey was to gather current and future expenditures by business on pollution control equipment and operating costs. Although there have been studies in the past that looked at the cost of pollution control, they tended to be limited in scope in that they addressed specific industry sectors, geographic areas or were of a less comprehensive nature. Thus the main focus of the research was placed on gathering the cost data.

Of all the completed questionnaires tabulated for this report, only 3% lacked information in the cost section. However, it must be noted that approximately 100 of the larger companies that agreed at the screening stage to complete the study, took the time to write a letter declining to participate. Many attributed this non-response to the amount of work required to provide the detailed costs requested, or because of concerns over the confidentiality of the data. We can presume that many of the others who originally agreed to the questionnaire but did not complete it, failed to do so for similar reasons.

Two further considerations prior to looking at the results. Respondents were instructed in the questionnaire to indicate clearly by entering a zero, if their company did not spend anything on a given item. The analysis that follows, presents the cost data in two ways. First, an average expenditure has been calculated based on the total respondents who completed the cost section. In other words, the average expenditure also INCLUDES those who indicated they spent nothing on a specific item. Secondly, the average expenditure has been recalculated EXCLUDING those who spend nothing to show the ACTUAL average expenditure by those who ARE spending.

Finally, the results that follow look mainly at the expenditures made in fiscal 1989 for two reasons. Firstly, all companies were asked about their fiscal 1989 expenditures, whereas only the larger companies were asked all sections of the 1990 expenditures. Secondly, although all were asked to estimate fiscal 1992 expenditures, these figures should be treated with caution. Given the fact that they are estimates, and that environmental regulations are changing all the time, this makes the estimating that much more difficult.

4.1 EXPENDITURES BY COMPANY SIZE AND REGION

4.1.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

4.1.1.1 EXPENDITURES FOR ALL COMPANIES (INCLUDING THOSE WHICH SPENT NOTHING ON ENVIRONMENTAL CONTROLS)

On average, in fiscal 1989, all surveyed companies with less than 50 employees spent slightly over $6,026 to purchase capital equipment for pollution control. This figure is a little more than twice the second largest expenditure, that being plant modifications. Overall, small business spent $2,528 on supplies related to pollution control in fiscal 1989, and a further $1,683 on salaries and wages.

In total (eg. all cost categories), in fiscal 1989, small business spent on average $18,655 on pollution control. This includes both capital expenditures as well as operating costs. Small business estimates that in fiscal 1992, on average they will spend $47,441. This represents an increase of 154% over the 1989 expenditures.

(Reference: Table 50)

4.1.1.2 EXPENDITURES FOR COMPANIES WHICH ACTUALLY SPENT ON ENVIRONMENTAL CONTROLS

When only those companies with less than 50 employees who actually spent money on pollution control in fiscal 1989 are analyzed, a slightly different pattern emerges. For example, the largest average expenditure in 1989 was made on physical plant modifications ($43,544), while the average spent on the purchase of capital equipment came in at about $39,578. Salaries and wages were the third largest average expenditure ($27,259) followed by land management costs ($25,780). Supplies, which represented the third largest expenditure when all companies were included, fell to the ninth position when averaged only on those companies who actually spent money in 1989.

Considering the estimated expenditures in fiscal 1992 for companies who indicated they would be spending on pollution control, the total average amount is $627,342. This represents an increase in average expenditure of 223% over the fiscal 1989 average of $194,560.

(Reference: Table 51)

4.1.2 COMPANIES WITH 50 OR MORE EMPLOYEES

4.1.2.1 EXPENDITURES FOR ALL COMPANIES (INCLUDING THOSE WHICH SPENT NOTHING ON ENVIRONMENTAL CONTROLS)

As would be expected, average expenditures on pollution control at companies with 50 or more employees is substantially higher than at smaller companies. In fiscal 1989, on average all the larger companies in the sample spent the largest amount of their budget on the purchase of capital equipment ($426,799). The next largest expenditure was on equipment maintenance ($143,516), followed by salaries and wages ($129,302).

In total larger companies spent in fiscal 1989, on average, almost one million dollars on pollution control equipment and operating costs. Looking ahead to fiscal 1992, the total average expenditure is only expected to increase by 1%, to slightly over a million dollars. (As has been noted in the Executive Summary, large business already spends considerable sums of money on environmental protection, thus it is not surprising that the percentage increase in expenditures is small.)

(Reference: Table 52)

4.1.2.2 EXPENDITURES FOR COMPANIES WHICH ACTUALLY SPENT ON ENVIRONMENTAL CONTROLS

When we consider only those large companies who actually spent money on pollution control in fiscal 1989, the ranking of expenditures changes somewhat. Again, the single largest average expenditure made was for the purchase of capital equipment ($1,182,765). This is more than three times the amount spent on the next largest expenditure which was physical plant modifications ($369,103). Equipment maintenance and salaries and wages follow closely behind ($364,842 and $356,431 respectively).

Amongst those larger companies who did spend on pollution control in fiscal 1989, the total average expenditure was almost three million dollars ($2,932,017). Large business expects to increase their total average expenditure by 12% in fiscal 1992 (to $3,279,469). Clearly, the larger Canadian business concern is already making substantial investments in pollution control, and does not foresee that dramatically increased expenditures will be required in the short term.

(Reference: Table 53)

4.1.3 REGIONAL EXPENDITURES

4.1.3.1 EXPENDITURES FOR ALL COMPANIES (INCLUDING THOSE WHICH SPENT NOTHING ON ENVIRONMENTAL CONTROLS)

As was noted when looking at the data by company size, when the expenditure data is analysed by region, similar patterns are evident in terms of the items which companies spend the most on. For example, in all regions except Quebec, the single largest average expenditure made by all companies was on purchased capital equipment. In the province of Quebec though, companies surveyed indicated that they were spending more on salaries and wages related to pollution control than on any other single item.

There are some rather significant differences to be noted in the average expenditure by region. Again, considering just purchased capital equipment, Ontario based companies spent in fiscal 1989 on average close to $40,000 more than did companies in the west, ($130,966 versus $96,071 respectively). Companies in Quebec and the east spent on average significantly less on purchased capital equipment ($21,299 versus $46,848 respectively) in fiscal 1989.

Considering the total average expenditure of all companies surveyed in fiscal 1989, Ontario based companies spent the most ($304,064), followed by western based firms ($195,092), eastern companies ($139,240) and Quebec based companies ($106,256). However, when we look at the expected total average expenditure in fiscal 1992, the ranking changes. Quebec based firms expect to spend $349,666 on average which represents more than a 200% increase over 1989. The western region follows with an expected total average expenditure of $254,043 representing a 30% over 1989.

Interestingly, companies in both Ontario and the eastern region expect to be spending less on average, on environmental protection in fiscal 1992. In Ontario the total average expenditure is expected to fall to $221,775 or a 27% decline, while in the east companies expect to spend on average $92,161 which is a decline of 34%.

(Reference: Tables 54-57)

4.1.3.2 EXPENDITURES FOR COMPANIES WHICH ACTUALLY SPENT ON ENVIRONMENTAL CONTROLS

However, when we look at the average pollution control expenditures just based on companies who actual spent, a somewhat different picture emerges. In fiscal 1989, companies in the west made the largest average expenditure followed closely by firms in Ontario ($1,521,582 versus $1,417,481 respectively). Companies in the east were again in third place in terms of average expenditure followed by Quebec based companies.

When we compare the total average expenditure in fiscal 1989 of "spending" companies with fiscal 1992, Quebec based companies again show the largest increase in expected pollution control expenditures. Quebec companies expect to spend on average in fiscal 1992 nearly three million dollars which represents an increase over 1989 of 242%. Western based companies also expect to have a healthy increase in expenditures between 1989 and 1992 (38%) to just over two million dollars on average.

In Ontario when we consider only those companies who are spending on pollution control, they expect a small increase in average expenditures of 6% between 1989 and 1992. Again, eastern based companies are expecting to spend less on pollution control in 1992 than in 1989 (a decline of 11%).

(Reference: Tables 58-61)

TABLE 50

AVERAGE EXPENDITURES - OVERALL (INCLUDING ZERO RESPONSES)

LESS THAN 50 EMPLOYEE COMPANIES

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$6,026	$4,977	$18,512
LEASED CAPITAL EQUIPMENT	$235	$100	$4,765
PHYSICAL PLANT MODIFICATIONS	$2,963	$ 1,414	$ 6,478
OPERATING EXPENDITURES			
SUPPLIES	$2,528	$8,402	$2,901
SALARIES	$1,683	$12,464	$1,881
TRAINING	$323	$564	$1,980
STORAGE CONTAINERS	$331	$613	$2,524
STORAGE WAREHOUSING	$146	$424	$2,101
WASTE DISPOSAL	$1,390	$12,458	$ 1,988
SHIPPING	$997	$5,275	$ 1,038
EQUIP. MAINTENANCE	$1,086	$5,316	$ 1,541
LAND MANAGMENT	$947	$7,909	$ 1,732

TOTAL AVERAGE CAPITAL EXPENDITURES	$9,224	$6,491	$29,755
TOAL AVERAGE OPERATING EXPENDITURES	$9,431	$53,425	$17,686
TOTAL AVERAGE EXPENDITURES	$18,655	$59,916	$47,441

TABLE 51

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

LESS THAN 50 EMPLOYEE COMPANIES

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$39,578	$50,216	$175,375
LEASED CAPITAL EQUIPMENT	$15,767	$8,632	$19,650
PHYSICAL PLANT MODIFICATIONS	$43,544	$37,413	$136,058
OPERATING EXPENDITURES			
SUPPLIES	$5,577	$22,407	$8,014
SALARIES	$27,259	$53,864	$45,396
TRAINING	$2,665	$4,014	$23,781
STORAGE CONTAINERS	$3,530	$4,122	$37,096
STORAGE WAREHOUSING	$5,574	$7,400	$94,938
WASTE DISPOSAL	$8,749	$30,398	$13,393
SHIPPING	$7,095	$45,976	$ 9,282
EQUIP. MAINTENANCE	$9,442	$21,621	$17,176
LAND MANAGMENT	$25,780	$53,608	$47,183

TOTAL AVERAGE CAPITAL EXPENDITURES	$98,889	$96,261	$331,083
TOTAL AVERAGE OPERATING EXPENDITURES	$95,671	$243,419	$296,259
TOTAL AVERAGE EXPENDITURES	$194,560	$339,671	$627,342

TABLE 52

AVERAGE EXPENDITURES - OVERALL
(INCLUDING ZERO RESPONSES)

50 PLUS EMPLOYEE COMPAINIES

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$426,799	$404,372	$413,164
LEASED CAPITAL EQUIPMENT	$6,910	$2,579	$2,718
PHYSICAL PLANT MODIFICATIONS	$93,366	$56,905	$123,660
OPERATING EXPENDITURES			
SUPPLIES	$86,209	$155,271	$81,740
SALARIES	$129,302	$92,474	$101,163
TRAINING	$8,372	$7,386	$6,567
STORAGE CONTAINERS	$4,509	$5,120	$5,467
STORAGE WAREHOUSING	$631	$966	$1,317
WASTE DISPOSAL	$77,622	$67,710	$69,447
SHIPPING	$9,278	$11,433	$12,148
EQUIP. MAINTENANCE	$143,516	$156,510	$162,030
LAND MANAGMENT	$12,312	$17,337	$27,995

TOTAL AVERAGE CAPITAL EXPENDITURES	$527,075	$463,856	$539,452
TOTAL AVERAGE OPERATING EXPENDITURES	$471,751	$513,847	$467,874
TOTAL AVERAGE EXPENDITURES	$998,826	$977,703	$1,007,416

TABLE 53

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

50 PLUS EMPLOYEE COMPANIES

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$1,182,765	$1,097,964	$1,337,349
LEASE CAPITAL EQUIPMENT	$91,438	$35,172	$36,018
PHYSICAL PLANT MODIFICATIONS	$369,103	$219,570	$551,257
OPERATING EXPENDITURES			
SUPPLIES	$163,487	$294,429	$151,281
SALARIES	$356,431	$205,556	$271,968
TRAINING	$30,125	$26,110	$23,111
STORAGE CONTAINERS	$19,776	$23,718	$24,869
STORAGE WAREHOUSING	$8,059	$12,988	$18,207
WASTE DISPOSAL	$123,783	$107,854	$111,838
SHIPPING	$57,442	$68,812	$67,631
EQUIP. MAINTENANCE	$364,842	$368,004	$369,507
LAND MANAGMENT	$164,766	$178,706	$316,433

TOTAL AVERAGE CAPITAL EXPENDITURES	$1,643,306	$1,352,706	$1,924,624
TOTAL AVERAGE OPERATING EXPENDITURES	$1,288,711	$1,286,177	$1,354,845
TOTAL AVERAGE EXPENDITURES	$2,932,017	$2,638,883	$3,279,469

TABLE 54

AVERAGE EXPENDITURES - OVERALL
(INCLUDING ZERO RESPONSES)

WESTERN REGION

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$96,071	$200,328	$147,288
LEASED CAPITAL EQUIPMENT	$421	$292	$170
PHYSICAL PLANT MODIFICATIONS	$33,746	$12,167	$26,512
OPERATING EXPENDITURES			
SUPPLIES	$11,942	$319,228	$14,934
SALARIES	$8,146	$46,424	$11,290
TRAINING	$1,568	$10,997	$1,803
STORAGE CONTAINERS	$807	$4,089	$1,234
STORAGE WAREHOUSING	$219	$242	$210
WASTE DISPOSAL	$6,451	$38,714	$10,173
SHIPPING	$1,618	$8,136	$1,963
EQUIP. MAINTENANCE	$31,777	$191,825	$33,915
LAND MANAGMENT	$2,326	$10,844	$4,551

TOTAL AVERAGE CAPITAL EXPENDITURES	$130,238	$212,787	$173,970
TOTAL AVERAGE OPERATING EXPENDITURES	$64,854	$630,499	$80,073
TOTAL AVERAGE EXPENDITURES	$195,092	$843,286	$254,043

TABLE 55

AVERAGE EXPENDITURES - OVERALL (INCLUDING ZERO RESPONSES)

ONTARIO

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$130,966	$31,608	$47,859
LEASED CAPITAL EQUIPMENT	$592	$653	$1,362
PHYSICAL PLANT MODIFICATIONS	$11,319	$13,830	$35,552
OPERATING EXPENDITURES			
SUPPLIES	$24,215	$61,101	$22,859
SALARIES	$44,043	$65,784	$21,156
TRAINING	$3,342	$4,310	$1,685
STORAGE CONTAINERS	$1,614	$4,290	$1,731
STORAGE WAREHOUSING	$268	$920	$558
WASTE DISPOSAL	$35,586	$83,363	$25,933
SHIPPING	$4,692	$14,877	$5,617
EQUIP. MAINTENANCE	$44,773	$141,947	$49,485
LAND MANAGMENT	$2,654	$20,271	$7,978

TOTAL AVERAGE CAPITAL EXPENDITURES	$142,877	$46,091	$84,773
TOTAL AVERAGE OPERATING EXPENDITURES	$161,187	$396,864	$137,002
TOTAL-AVERAGE EXPENDITURES	$304,064	$442,955	$221,775

TABLE 56

AVERAGE EXPENDITURES - OVERALL (INCLUDING ZERO RESPONSES)

QUEBEC

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$21,299	$15,666	$180,454
LEASED CAPITAL EQUIPMENT	$5,378	$1,121	$978
PHYSICAL PLANT MODIFICATIONS	$18,588	$6,769	$41,996
OPERATING EXPENDITURES			
SUPPLIES	$16,423	$58,644	$25,504
SALARIES	$31,315	$145,571	$52,920
TRAINING	$347	$2,006	$9,944
STORAGE CONTAINERS	$1,390	$5,560	$12,107
STORAGE WAREHOUSING	$278	$1,538	$10,593
WASTE DISPOSAL	$2,700	$13,662	$4,491
SHIPPING	$1,581	$4,293	$2,242
EQUIP. MAINTENANCE	$5,441	$28,775	$7,955
LAND MANAGMENT	$1,516	$6,636	$482

TOTAL AVERAGE CAPITAL EXPENDITURES	$45,265	$23,556	$223,428
TOTAL AVERAGE OPERATING EXPENDITURES	$60,99[illegible]	$266,685	$126,238
TOTAL AVERAGE EXPENDITURES	$106,256	$290,241	$349,666

TABLE 57

AVERAGE EXPENDITURES - OVERALL (INCLUDING ZERO RESPONSES)

EASTERN REGION

TOTAL COMPANIES	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$46,848	$19,827	$19,980
LEASED CAPITAL EQUIPMENT	$953	$148	$42
PHYSICAL PLANT MODIFICATIONS	$18,565	$15,458	$1,130
OPERATING EXPENDITURES			
SUPPLIES	$32,291	$133,284	$11,427
SALARIES	$11,303	$36,596	$10,469
TRAINING	$855	$9,718	$698
STORAGE CONTAINERS	$87	$316	$711
STORAGE WAREHOUSEING	$140	$270	$122
WASTE DISPOSAL	$5,395	$23,435	$13,611
SHIPPING	$233	$370	$389
EQUIP. MAINTENANCE	$11,865	$46,988	$13,581
LAND MANAGMENT	$10,705	$11,977	$20,001

TOTAL AVERAGE CAPITAL EXPENDITURES	$66,366	$35,433	$21,152
TOTAL AVERAGE OPERATING EXPENDITURES	$72,874	$263,054	$71,009
TOTAL AVERAGE EXPENDITURES	$139,240	$298,487	$92,161

TABLE 58

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

WESTERN REGION

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$632,781	$1,607,283	$1,022,358
LEASED CAPITAL EQUIPMENT	$29,100	$20,160	$17,583
PHYSICAL PLANT MODIFICATIONS	$381,171	$186,297	$376,113
OPERATING EXPENDITURES			
SUPPLIES	$25,329	$703,606	$37,974
SALARIES	$98,775	$141,925	$151,099
TRAINING	$9,725	$38,315	$13,752
STORAGE CONTAINERS	$7,629	$25,979	$15,378
STORAGE WAREHOUSING	$5,527	$2,905	$5,501
WASTE DISPOSAL	$30,749	$85,329	$52,533
SHIPPING	$16,985	$62,763	$21,227
EQUIP. MAINTENANCE	$233,147	$531,209	$282,632
LAND MANAGMENT	$50,664	$82,879	$98,248

TOTAL AVERAGE CAPITAL EXPENDITURES	$1,043,052	$1,813,740	$1,416,054
TOTAL AVERAGE OPERATING EXPENDITURES	$478,530	$1,674,910	$678,344
TOTAL AVERAGE EXPENDITURES	$1,521,582	$3,488,658	$2,094,398

TABLE 59

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

ONTARIO

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$610,425	$177,712	$331,761
LEASED CAPITAL EQUIPMENT	$25,377	$30,993	$43,832
PHYSICAL PLANT MODIFICATIONS	$92,845	$126,205	$341,494
OPERATING EXPENDITURES			
SUPPLIES	$48,431	$114,730	$54,272
SALARIES	$209,403	$179,535	$166,133
TRAINING	$17,634	$14,534	$11,752
STORAGE CONTAINERS	$12,336	$19,797	$16,310
STORAGE WAREHOUSING	$6,596	$12,149	$17,369
WASTE DISPOSAL	$98,138	$119,608	$79,015
SHIPPING	$26,480	$87,279	$42,072
EQUIP. MAINTENANCE	$214,541	$325,861	$256,424
LAND MANAGMENT	$55,269	$165,769	$146,532

TOTAL AVERAGE CAPITAL EXPENDITURES	$728,647	$334,910	$717,087
TOTAL AVERAGE OPERATING EXPENDITURES	$688,834	$1,009,262	$789,879
TOTAL AVERAGE EXPENDITURES	$1,417,481	$1,344,172	$1,506,966

TABLE 60

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

QUEBEC

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$92,885	$89,968	$999,180
LEASED CAPITAL EQUIPMENT	$106,828	$25,929	$18,713
PHYSICAL PLANT MODIFICATIONS	$172,440	$108,311	$538,958
OPERATING EXPENDITURES			
SUPPLIES	$43,622	$123,527	$82,814
SALARIES	$256,548	$514,698	$403,869
TRAINING	$4,496	$16,550	$105,731
STORAGE CONTAINERS	$9,377	$21,173	$99,285
STORAGE WAREHOUSING	$11,905	$21,757	$508,466
WASTE DISPOSAL	$24,422	$31,454	$29,666
SHIPPING	$8,640	$22,369	$11,092
EQUIP. MAINTENANCE	$35,202	$105,511	$47,243
LAND MANAGMENT	$72,277	$164,250	$23,333

TOTAL AVERAGE CAPITAL EXPENDITURES	$372,153	$224,208	$1,556,851
TOTAL AVERAGE OPERATING EXPENDITURES	$466,489	$1,021,289	$1,311,499
TOTAL AVERAGE EXPENDITURES	$838,642	$1,245,497	$2,868,350

TABLE 61

AVERAGE EXPENDITURES - TOTAL SPENDERS (EXCLUDING ZERO RESPONSES)

EASTERN REGION

TOTAL COMPANIES WHO SPENT	FISCAL 1989	FISCAL 1990	FISCAL 1992
CAPITAL EXPENDITURES			
PURCHASED CAPITAL EQUIPMENT	$263,070	$206,767	$169,836
LEASED CAPITAL EQUIPMENT	$29,957	$6,520	$2,025
PHYSICAL PLANT MODIFICATIONS	$226,911	$283,400	$21,699
OPERATING EXPENDITURES			
SUPPLIES	$61,646	$327,152	$24,395
SALARIES	$91,684	$116,247	$105,743
TRAINING	$6,244	$52,480	$6,378
STORAGE CONTAINERS	$1,196	$3,250	$8,898
STORAGE WAREHOUSING	$3,853	$20,000	$4,145
WASTE DISPOSAL	$21,197	$46,870	$55,835
SHIPPING	$2,233	$10,000	$4,115
EQUIP. MAINTENANCE	$72,183	$126,869	$90,088
LAND MANAGMENT	$157,018	$107,800	$336,697

TOTAL AVERAGE CAPITAL EXPENDITURES	$519,938	$496,687	$193,560
TOTAL AVERAGE OPERATING EXPENDITURES	$417,254	$810,668	$636,294
TOTAL AVERAGE EXPENDITURES	$937,192	$1,307,355	$829,854

4.2 OTHER ENVIRONMENTAL COST INDICATORS

4.2.1 CURRENT EXPENDITURES (1989/90)

4.2.1.1 OPERATING COSTS - COMPANY SIZE

All companies were asked to state what proportion of their current year budget (1989 on the mail out and 1990 on the telephone surveys) they were spending on environmental protection related to operating cost and capital expenditures. Overall, more than half the respondents stated either they were spending nothing on operating costs for environmental protection (32%), or they refused to answer the question (20%)

As would be expected, a larger percentage of the 50 plus employee firms indicated that they were spending at least some monies from their total budget on operating costs (63% versus only 45% of the smaller firms). The largest proportion of companies were spending 1-2% of their total budget on operating costs.

(Reference: Table 62)

4.2.1.2 CAPITAL COSTS - COMPANY SIZE

When it comes to capital expenditures, almost six in ten companies surveyed indicated that zero percent of their total budget was allocated to environmental protection. A similar 20% did not answer the question.

(Reference: Table 63)

4.2.1.3 OPERATING/CAPITAL COSTS - REGION

On a regional basis, there are fewer differences to be noted. Quebec businesses again exhibit slightly different responses in that a larger percentage than else refused to answer the question.

(Reference: Tables 64-65)

4.2.2 FUTURE EXPENDITURES (1992/1999)

4.2.2.1 1992 EXPENDITURES - COMPANY SIZE AND REGION

All surveyed companies were also asked to indicate what percentage of their total 1992 budget they would spend on environmental protection measures. On average all companies surveyed stated that they would spend 2.8% on operating costs and an additional 2.5% on capital expenditures. As was noted previously, larger companies tended to spend more on environmental control, and this held true for future expenditures.

Companies with 50 or more employees stated that on average 4.4% of their total 1992 budget would be spent on operating costs related to environmental controls, nearly twice the level of smaller companies (2.4%). In terms of capital expenditures, the difference is even greater. Small companies indicated that on average 1.7% of their total budget would be spent on capital costs related to environmental control, while large firms stated that they would spend 5.1% of their budget on capital costs.

(Reference: Tables 66-67)

4.2.2.2 1999 EXPENDITURES - COMPANY SIZE AND REGION

When asked to look even further ahead, surveyed companies indicated that they felt that the percentage of total budget spent on environmental measures would be larger. On average, all surveyed companies indicated that in 1999 5.3% of their budget would be allocated to operation costs and 5.4% to capital costs relating to environmental controls.

As can be noted when considering the average percentage of total expenditures spent on environmental protection, companies with less than 50 employees expect to be spending a much larger proportion in 1999 than in 1992 (approximately 50% more). For example in 1992 small firms expect to spend on average 2.4% of their budget on operating costs related to environmental protection, while in 1999 they expect to be spending 4.2%.

Larger firms on the other hand, already spend a healthy percentage of their total budget on environmental protection, and thus do not expect to have to increase the percentage spend dramatically. This is demonstrated by the average percentage of total budget spent on capital equipment (5.1% in 1992 versus 6.0% in 1999)

On a regional basis, few differences can be noted regarding the average percent of total budget allocated to operating and capital costs related to environmental measures in 1992. However, the projections to 1999 reveal some interesting differences. For example, Quebec based firms expect to be spending on average 7.7% of their budget on environmental measures related to operating costs (considerably higher than the overall average of 5.3%). Companies in the west expect to be spending nearly twice the national average percent on capital expenditures (9.0 versus 5.4 respectively).

(Reference: Tables 68-69)

TABLE 62

OPERATING COSTS

PERCENTAGE OF TOTAL 1989/90 FISCAL BUDGET ALLOCATED TO ENVIRONMENTAL PROTECTION

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	78	22	100
	1814	506	2320
ZERO	37	15	32
ONE	23	34	25
TWO	7	10	7
THREE	3	4	3
FOUR	1	2	1
5-9	7	8	7
10-20	3	3	3
21-49	1	1	1
50 PLUS	**	1	1
REFUSED/DK/NA	20	22	20

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 63

CAPITAL COSTS

PERCENTAGE OF TOTAL 1989/90 FISCAL BUDGET ALLOCATED TO ENVIRONMENTAL PROTECTION

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	78	22	100
	1814 %	506 %	2320 %
ZERO	63	34	57
ONE	7	21	10
TWO	3	3	3
THREE	1	2	4
FOUR	1	1	1
5-9	3	7	4
10-20	2	5	3
21-49	1	2	1
50 PLUS	1	2	1
REFUSED/DK/NA	17	24	19

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 64

OPERATING COSTS

PERCENTAGE OF TOTAL 1989/90 FISCAL BUDGET ALLOCATED TO ENVIRONMENTAL PROTECTION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL SAMPLE
REGIONAL HORIZONTAL %	32	39	21	10	100
	733 %	887 %	468 %	233 %	2320 %
ZERO	37	26	35	31	32
ONE	23	29	22	26	25
TWO	8	7	6	9	7
THREE	3	3	3	2	3
FOUR	1	1	1	1	1
5-9	7	7	4	9	7
10-20	4	3	2	3	3
21-49	**	1	1	1	1
50+	1	**	1	-	1
REFUSED/DON'T KNOW/NA	16	20	26	19	20

TABLE 65

CAPITAL COSTS

PERCENTAGE OF TOTAL 1989/90 FISCAL BUDGET ALLOCATED TO ENVIRONMENTAL PROTECTION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL SAMPLE
REGIONAL HORIZONTAL %	32	39	21	10	100
	733 %	887 %	468 %	233 %	2320 %
ZERO	66	54	47	61	57
ONE	6	12	16	9	10
TWO	2	3	3	3	3
THREE	1	1	2	2	1
FOUR	1	1	1	1	1
5-9	3	5	4	2	4
10-20	3	3	2	2	3
21-49	1	1	1	-	1
50+	1	1	1	1	1
REFUSED/DON'T KNOW/NA	15	20	23	19	19

TABLE 66

ESTIMATED AVERAGE % OF TOTAL 1992 BUDGET SPENT ON ENVIRONMENTAL PROTECTION

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
OPERATING COSTS	2.4	4.4	2.8
CAPITAL COSTS	1.7	5.1	2.5

TABLE 67

ESTIMATED AVERAGE % OF TOTAL 1992 BUDGET SPENT ON ENVIRONMENTAL PROTECTION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL SAMPLE
OPERATING COSTS	3.0	2.8	2.8	2.5	2.8
CAPITAL COSTS	2.1	2.8	2.7	1.5	2.5

TABLE 68

ESTIMATED AVERAGE % OF TOTAL 1999 BUDGET SPENT ON ENVIRONMENTAL PROTECTION

COMPANY SIZE

	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
OPERATING COSTS	4.2	5.7	5.3
CAPITAL COSTS	3.2	6.0	5.4

TABLE 69

ESTIMATED AVERAGE % OF TOTAL 1999 BUDGET SPENT ON ENVIRONMENTAL PROTECTION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL SAMPLE
OPERATING COSTS	5.1	5.1	7.7	2.8	5.3
CAPITAL COSTS	9.0	4.9	3.4	3.3	5.4

4.3 EXPENDITURE PROJECTIONS TO THE NATIONAL BUSINESS POPULATION

As was mentioned earlier, a key reason for conducting this survey was to determine as accurately as possible what is the total sum of money being spent by Canadian business on environmental protection. Although there is no way to achieve this short, of a national business census, this survey covered a broad cross section of businesses by industry sector, region and size. Within the limits of the sampling frame, the following data presents projected environmental expenditure data.

After careful consideration of a number of projection methods following method was deemed most appropriate. It is the simplest of the methods considered and provides projected dollars based on actual average expenditures within industry sector. First a profile of companies by industry group within each region that were under and over 50 employees was constructed that included, the universe of companies (using the Dun & Bradstreet database). Next the actual average total expenditure for each of these cells (i.e. industry/employee size/region) was entered. The final step involved multiplying this total average expenditure by the actual number of businesses in the universe industry sector.

As was mentioned earlier, since it was felt that the 1989 figures represented the most accurate in the survey (the other figures provided being future estimates), the projections are based on the 1989 data. (See Appendix C for the calculations used to arrive at these figures.)

It should also be noted, that as was mentioned earlier, all interviews were conducted at the head office location of the company. Data collected on expenditures has been tabulated based on the head office location rather than where the actual monies may have been invested. This may result in some degree of misallocation of expenditure dollars on a regional basis.

Total expenditure figures for each of the analysis variables (eg. employee size and region) were obtained by adding the total industry sector projected expenditure figure from each of the subcells. For example, the total projected expenditure for companies in the agricultural sector with less than 50 employees was derived by adding the appropriate figure from each of the four regions.

Based on the companies included in this survey, it is projected, that in fiscal 1989, companies with fewer than 50 employees spent a total of $8,882,906,812 on environmental protection measures. Even thought they make up a significantly smaller proportion of the total business universe, companies with 50 or more employees spent $12,019,519,896. Thus in total, it is projected than in 1989, Canadian business spent almost twenty-one billion dollars on environmental protection measures ($20,902,416,708).

4.3.1 TOTAL EXPENDITURES BY COMPANY SIZE

4.3.1.1 COMPANIES WITH LESS THAN 50 EMPLOYEES

Considering those companies with less than 50 employees, it is not surprising to find that the top five spenders by industry sector are also the sectors that represent either a key industry sector, or the largest proportion of the Canadian business population. The top ranked industry sector is the Forestry/Lumber and Paper products which spent just over three and a half billion dollars. The Wholesale Trade area (which represents 19% of the survey universe) was second and spent in total $2,114,272,000 on environmental protection measures.

There is a large gap in spending between these top two sectors and the next three under 50 employee sectors. For example the Pipeline/ Electric/Gas Utilities sector, which was in third place in total spending (and represents about .4% of the under 50 employee sample universe) spent $880,433,000 on environmental protection.

The Miscellaneous Retail sector which represents about 18% of the under 50 employee universe surveyed, spent just under half a billion dollars on environmental protection measures. The Business and Personal Services sector, representing 18% of the survey universe spent $354,294,000 on environmental protection measures. This sector which is dominated by small business, includes companies such as personal and industrial laundries, beauty and barber shops, photographic studios/labs, funeral services and disinfecting/ exterminating services, all of which generate a variety of chemical agents.

(Reference: Table 70)

4.3.1.2 COMPANIES WITH 50 OR MORE EMPLOYEES

When we consider the larger companies and their expenditures by industry sector, a slightly different pattern emerges. When ranked from largest to smallest total expenditure, the top spender amongst larger firms was the Primary Metal Fabrication sector which spent in total ($4,917,473,000).

In second and third positions, is the Wholesale Trade sector, spending $2,296,611,000, followed closely by the Forestry/Lumber and Paper products sector which spent $1,661,557,000 on environmental protection measures. The fourth place spending sector was the Coal/Oil/Gas industry which spent $970,102,000.

As might be expected, many of the resource based industry sectors in the 50 plus employee group ranked much higher in total expenditure than they did in the smaller company sector. For example, the Coal/Oil/Gas sector ranked fourth amongst larger companies and sixth amongst the smaller companies. The Metal Mining sector ranked fifth amongst the larger companies and ninth amongst the smaller companies.

However, there were also sectors where the converse occurred. The agricultural sector was ranked thirteenth in total spending amongst the smaller company grouping and was ranked 21st (last) amongst the larger company grouping. This however, should not be surprising given that only 1% of the total agricultural companies included in the sample universe employed more than 50 employees.

(Reference: Table 71)

4.3.2 TOTAL EXPENDITURES BY REGION

On a regional basis, companies in the western region spent the largest total dollar volume on environmental protection measures ($9,855,778,000). Ontario based firms spent the second largest dollar volume ($8,308,081,000). Companies in Quebec spent a total of $2,152,712,000, while the Eastern region was in a distance fourth, spending almost $600 million in total.

4.3.2.1 WESTERN CANADA

As would be expected, the Forestry/Lumber and Paper products sector ranked first in spending in the Western region at $4,667,682,000. The Wholesale trade sector followed behind spending in total $2,745,642,000. Again, as would be expected, the Coal/Oil/Gas sector was in third place spending in total $1,227,018,000.

As was noted previously, once we go past the first four or five top ranked industry sectors, the total dollars spent drop off quite rapidly. The western region is no exception. For example, the fourth ranked sector, Local and Air Transportation spent in total $406,881,000, while the fifth ranked sector, Personal and Business services spent in total $320,869,000.

(Reference: Table 72)

4.3.2.2 ONTARIO

The top ranked industry sector in Ontario is the Primary Metal Fabrication sector which reflects the manufacturing strength of the Ontario economy. This sector spent in total $4,816,576,000 on environmental protection measures. The second ranked sector, Pipeline/Electric/Gas Utilities industry spent $881,706,000, and is closely followed by the Wholesale Trade sector ($818,196,000).

The fourth and fifth ranked sectors in Ontario depart somewhat from the overall regional rankings. The Metal Mining sector was ranked fourth spending in total $699,040,000. Machinery/Transportation Equipment manufacturers ranked fifth and spent in total $276,031,000.

(Reference: Table 73)

4.3.2.3 QUEBEC

In Quebec the top ranked industry sector was Wholesale Trade which spent $830,415,000. Not surprisingly, the second ranked sector was the Forestry/Lumber and Paper products area which spent $520,015,000 on environmental protection. Reflecting the importance of the forestry industry in Quebec, (and the pressures put on this sector by environmentalists), this total expenditure figure far exceeds the monies spent by any other industry sector in Quebec (with the exception of the Wholesale sector).

The third ranked sector, Primary Metal Fabrication spent in total $166,472,000, while the fourth ranked sector, Auto Dealers and Gas Stations spent $116,099,000. Finally, it should be noted that there are three sectors in Quebec for which expenditure data was not obtained. In two of these sectors (Health Services and Miscellaneous Retail Trade) this lack of data is due to an extremely poor response (although both sectors were adequately represented in the initial sample universe).

The third sector, Coal/Oil/Gas has an extremely limited representation in the total Quebec business population representing only .08% of the total survey universe. Therefore it is not surprising that no data was obtained from this industry sector.

(Reference: Table 74)

4.3.2.4 EASTERN CANADA

Overall, the total dollars spent in Eastern Canada on environmental protection measures are dwarfed by the spending of companies in the other regions. This of course is due to a large extent to the total business population in eastern Canada rather than to any propensity to spend less on environmental protection measures.

The top ranked industry sector in the Eastern Region is the Miscellaneous Retail Trade sector which spent $327,432,000. The second ranked sector is the Trucking and Warehousing industry which spent $61,827,000 in total. Wholesale Trade is ranked third followed by the Food and Kindred Products sector reflecting the importance of the fisheries in the Atlantic provinces.

(Reference: Table 75)

4.3.3 TOTAL CANADA

As would be expected given Canada's heavy reliance on the resource sector, it is not surprising to find that the top ranked sector overall is Forestry/Lumber and Paper products which spent $5,224,481,000 on environmental protection measures on a national basis. It is followed closely by the Primary Metal Fabrication sector which spent $5,008,805,000 in total. Given that the Wholesale Trade sector is one of the largest (numerically) industry sectors it is not surprising that it ranks third in total spending ($4,410,883,000).

The only other sector to have spent more than a billion dollars on environment protection measures was the Coal/Oil/Gas industry ($1,231,327,000). Following closely behind in fifth and sixth position are the Pipeline/Electric/Gas Utilities and the Metal Mining sector ($969,351,000 and $892,490,000 respectively). The only other sector that spent more that half a billion dollars on environmental protection measures was the Miscellaneous Retail Trade sector which spent $519,742,000.

(Reference: Table 76)

TABLE 70

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

COMPANIES WITH LESS THAN 50 EMPLOYEES

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
FORESTRY/LUMBER	10,293	$346,150	$3,562,923,838
WHOLESALE TRADE	52,876	$39,985	$2,114,271,597
UTILITIES	1,211	$727,030	$880,433,497
MISC. RETAIL & REPAIR	48,397	$9,780	$473,332,400
PERSONAL & BUSINESS SERVICES	48,242	$7,344	$354,293,735
COAL/OIL/GAS	3,644	$71,686	$261,225,551
TRUCKING & WAREHOUSING	20,170	$9,587	$193,365,350
MACHINERY & TRANSPORTATION EQUIPMENT	9,127	$20,147	$183,881,247
METAL MINING	1,435	$87,055	$124,923,826
AUTO DEALERS & SERVICE STATIONS	21,157	$5,797	$122,648,754
AUTO REPAIR	20,711	$5,427	$112,390,085
FOOD & KINDRED PRODUCTS	2,824	$36,283	$102,463,750
AGRICULTURE	8,667	$11,510	$99,759,565
PRIMARY METAL FABRICATION	4,913	$18,590	$91,331,874
TEXTILE/LEATHER/RUBBER	8,047	$7,782	$62,625,697
STONE/CLAY/GLASS	2,018	$26,111	$52,691,500
OIL/COAL/RUBBER PRODUCTS	1,476	$30,445	$44,936,424
HEALTH SERVICES	3,717	$4,488	$16,683,500
LOCAL & AIR TRANSPORTATION	3,106	$4,934	$15,324,933
CHEMICALS	1,460	$5,714	$8,342,189
OTHER MINING	593	$8,529	$5,057,500
TOTAL	274,084		$8,882,906,812

TABLE 71

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

COMPANIES WITH 50 EMPLOYEES OR MORE

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
PRIMARY METAL FABRICATION	732	$6,717,859	$4,917,472,711
WHOLESALE TRADE	1,847	$1,243,428	$2,296,610,968
FORESTRY/LUMBER	755	$2,200,738	$1,661,557,182
COAL/OIL/GAS	199	$4,874,883	$970,101,645
METAL MINING	132	$5,814,899	$767,566,667
LOCAL & AIR TRANSPORTATION	319	$1,287,656	$410,762,300
MACHINERY & TRANSPORTATION EQUIPMENT	1,117	$170,028	$189,921,162
FOOD & KINDRED PRODUCTS	553	$224,988	$124,418,381
PERSONAL & BUSINESS SERVICES	1,516	$80,983	$122,769,945
OTHER MINING	50	$2,068,761	$103,438,069
UTILITIES	138	$644,329	$88,917,468
CHEMICALS	310	$261,326	$81,011,200
TRUCKING & WAREHOUSING	498	$140,514	$69,976,034
STONE/CLAY/GLASS	190	$350,083	$66,515,825
MISC. RETAIL/REPAIR	517	$89,768	$46,410,000
TEXTILE/LEATHER/RUBBER	700	$60,308	$42,215,642
OIL/COAL/RUBBER PRODUCTS	320	$104,450	$33,424,117
HEALTH SERVICES	1,144	$8,930	$10,216,313
AUTO DEALERS & SERVICE STATIONS	816	$9,110	$7,434,000
AUTO REPAIR	131	$33,742	$4,420,266
AGRICULTURE	93	$46,774	$4,350,000
TOTAL	12,077		$12,019,509,896

TABLE 72

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

WESTERN REGION

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
FORESTRY/LUMBER	4,033	$1,157,372	$4,667,681,571
WHOLESALE TRADE	16,421	$167,203	$2,745,642,397
COAL/OIL/GAS	3,561	$344,571	$1,227,018,326
LOCAL & AIR TRANSPORTATION	1,128	$360,710	$406,881,412
PERSONAL & BUSINESS SERVICES	1,5524	$20,669	$320,869,100
METAL MINING	1,032	$106,622	$110,033,826
UTILITIES	397	$189,406	$75,193,999
AGRICULTURE	3,211	$14,307	$45,938,984
TRUCKING & WAREHOUSING	8,499	$5,381	$45,733,719
OTHER MINING	265	$150,566	$39,900,000
STONE/CLAY/GLASS	689	$56,603	$38,999,700
PRIMARY METAL FABRICATION	1,412	$17,289	$24,412,000
AUTO REPAIR	6,794	$3,443	$23,389,630
FOOD & KINDRED PRODUCTS	903	$24,787	$22,382,376
MACHINERY & TRANSPORTATION EQUIPMENT	2,526	$8,226	$20,779,192
HEALTH SERVICES	1,849	$7,831	$14,480,000
TEXTILE/LEATHER/RUBBER	2,159	$3,968	$8,566,013
MISC. RETAIL & REPAIR	15,266	$397	$6,061,200
OIL/COAL/RUBBER PRODUCTS	370	$15,493	$5,732,572
CHEMICALS	396	$11,965	$4,738,020
AUTO DEALERS & SERVICE STATIONS	6,960	$193	$1,343,600
TOTAL	93,395		$9,855,777,637

TABLE 73

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

ONTARIO

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	TOTAL ONTARIO DOLLARS
PRIMARY METAL FABRICATION	2,880	$1,672,422	$4,816,576,385
UTILITIES	462	$1,908,455	$881,706,000
WHOLESALE TRADE	20,723	$39,483	$818,195,998
METAL MINING	379	$1,844,433	$699,040,000
MACHINERY & TRANSPORTATION EQUIPMENT	5,123	$53,881	$276,030,927
MISC. RETAIL & REPAIR	15,951	$11,676	$186,249,700
FOOD & KINDRED PRODUCTS	1,111	$130,716	$145,225,726
PERSONAL & BUSINESS SERVICES	18,785	$3,980	$74,759,848
TRUCKING & WAREHOUSING	4,793	$15,429	$73,952,624
AUTO REPAIR	6,733	$8,768	$59,037,484
CHEMICALS	828	$64,151	$53,117,060
STONE/CLAY/GLASS	820	$60,223	$49,382,750
OIL/COAL/RUBBER PRODUCTS	943	$51,390	$48,460,469
TEXTILE/LEATHER/RUBBER	3,605	$10,535	$37,977,225
FORESTRY/LUMBER	2,394	$15,167	$36,309,669
AGRICULTURE	2,602	$12,055	$31,366,500
HEALTH SERVICES	1,394	$7,329	$10,216,313
AUTO DEALERS & SERVICE STATIONS	6,242	$663	$4,136,300
OTHER MINING	192	$16,578	$3,182,900
LOCAL & AIR TRANSPORTATION	955	$3,243	$3,097,199
COAL/OIL/GAS	174	$346	$60,120
TOTAL	97,089		$8,308,081,197

TABLE 74

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

QUEBEC

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	TOTAL QUEBEC DOLLARS
WHOLESALE TRADE	14,597	$56,889	$830,415,170
FORESTRY/LUMBER	3,517	$147,857	$520,014,580
PRIMARY METAL FABRICATION	1,167	$142,650	$166,472,200
AUTO DEALERS & SERVICE STATIONS	6,242	$18,600	$116,098,604
TRUCKING/WAREHOUSING	5,548	$14,749	$81,827,681
MACHINERY & TRANSPORTATION EQUIPMENT	2,180	$35,318	$76,992,290
PERSONAL & BUSINESS SERVICES	12,715	$6,009	$76,405,982
TEXTILE/LEATHER/RUBBER	2,580	$21,038	$54,277,551
METAL MINING	131	$404,784	$53,026,667
CHEMICALS	488	$64,487	$31,469,509
STONE/CLAY/GLASS	541	$56,007	$30,299,875
AUTO REPAIR	5,936	$4,797	$28,472,149
OIL/COAL/RUBBER PRODUCTS	426	$54,102	$23,047,500
FOOD & KINDRED PRODUCTS	902	$19,959	$18,003,000
LOCAL & AIR TRANSPORTATION	1,045	$15,151	$15,832,850
AGRICULTURE	2,205	$5,968	$13,160,368
UTILITIES	413	$30,148	$12,450,966
OTHER MINING	139	$31,978	$4,445,000
MISC. RETAIL/REPAIR	13,588	$0	$0
COAL/OIL/GAS	62	$0	$0
HEALTH SERVICES	1,141	$0	$0
TOTAL	75,563		$2,152,711,942

TABLE 75

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

EASTERN REGION

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
MISC. RETAIL/REPAIR	4,109	$79,686	$327,431,500
TRUCKING & WAREHOUSING	1,828	$33,822	$61,827,360
OTHER MINING	47	$1,297,184	$60,967,669
FOOD & KINDRED PRODUCTS	461	$89,525	$41,271,029
METAL MINING	25	$1,215,600	$30,390,000
WHOLESALE TRADE	2,982	$5,576	$16,629,000
AGRICULTURE	742	$18,388	$13,643,713
AUTO DEALER	2,529	$3,363	$8,504,250
AUTO REPAIR	1,379	$4,287	$5,911,089
PERSONAL & BUSINESS SERVICES	2,734	$1,839	$5,028,750
COAL/OIL/GAS	46	$92,364	$4,248,750
TEXTILE/LEATHER/RUBBER	403	$9,977	$4,020,550
HEALTH SERVICES	477	$4,620	$2,203,500
PRIMARY METAL FABRICATION	186	$7,226	$1,344,000
OIL/COAL/RUBBER PRODUCTS	57	$19,649	$1,120,000
STONE/CLAY/GLASS	158	$3,323	$525,000
FORESTRY/LUMBER	1,104	$430	$475,200
LOCAL & AIR TRANSPORTATION	297	$929	$275,772
CHEMICALS	58	$497	$28,800
MACHINERY & TRANSPORTATION EQUIPMENT	415	$0	$0
UTILITIES	77	$0	$0
TOTAL	20,114		$585,845,932

TABLE 76

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR

TOTAL RESPONDENTS

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
FORESTRY/LUMBER	11,048	$472,889	$5,224,481,020
PRIMARY METAL FABRICATION	5,645	$887,299	$5,008,804,585
WHOLESALE TRADE	54,723	$80,604	$4,410,882,565
COAL/OIL/GAS	3,843	$320,408	$1,231,327,196
UTILITIES	1,349	$718,570	$969,350,965
METAL MINING	1,567	$569,554	$892,490,492
MISC. RETAIL/REPAIR	48,914	$10,626	$519,742,400
PERSONAL & BUSINESS SERVICES	49,758	$9,588	$477,063,680
LOCAL & AIR TRANSPORTATION	3,425	$124,405	$426,087,233
MACHINERY & TRANSPORTATION EQUIPMENT	10,244	$36,490	$373,802,409
TRUCKING/WAREHOUSING	20,668	$12,742	$263,341,385
FOOD & KINDRED PRODUCTS	3,377	$67,185	$226,841,131
AUTO DEALERS & SERVICE STATIONS	21,973	$5,920	$130,082,754
STONE/CLAY/GLASS	2,208	$53,989	$119,207,325
AUTO REPAIR	20,842	$5,605	$116,810,352
OTHER MINING	643	$168,733	$108,495,569
TEXTILE/LEATHER/RUBBER	8,747	$11,986	$104,841,339
AGRICULTURE	8,760	$11,885	$104,109,565
CHEMICALS	1,770	$50,482	$89,353,389
OIL/COAL/RUBBER PRODUCTS	1,796	$43,631	$78,360,541
HEALTH SERVICES	4,861	$5,534	$26,899,813
TOTAL	286,161		$20,902,416,573

4.4 DISTRIBUTION OF EXPENDITURES BY LEVEL OF GOVERNMENT

All respondents were asked to indicate what percentage of their total 1989 environmental expenditures were made to meet the requirements of various levels of government regulation. Overall, the largest percentage was spent to meet various provincial government regulations (35.2%). Slightly over ten percent was spent to meet municipal regulations, while the smallest percent was spent to meet federal regulations (9.8%). These figures reflect the fact that generally there are considerably more provincial environmental regulations than federal regulations.

As will be noted, the average environmental expenditures does not total 100%. This is due to the fact that surveyed companies were asked to indicate the percentage spent to MEET government regulations. Clearly then, the difference is the percentage spent by surveyed companies on environmental protection that EXCEEDED required expenditures. Thus overall, on average approximately 40% of the monies spent on environmental protection is over and above that required to meet government regulations.

4.4.1 COMPANY SIZE

Interestingly, the sampled companies indicated that federal regulations appear to have equal bearing on both small and large businesses, since there was only a marginal difference in the average percentage spent. However, large business appears to have to spend a significantly higher percentage than small business to meet provincial government regulations. The same holds true for municipal regulations though to a much lesser degree.

(Reference: Table 77)

4.4.2 REGIONAL DIFFERENCES

On a regional basis, businesses in the east indicated that they spend nearly twenty percent of their environmental dollars to meet federal government regulations, more than twice the national average. Quebec based firms spend the smallest percentage to meet federal regulations. However, they also spend the largest percentage to meet provincial government regulations. Municipal governments in Ontario appear to be stricter than elsewhere since Ontario based companies indicated that they spend on average 16% of their environmental dollars to meet regulations at that level.

(Reference: Table 78)

4.5 THE EFFECT OF ENVIRONMENTAL REGULATIONS ON BUSINESS HEALTH

A key issue to business and regulators is assessing the impact that various regulations will have on the health of Canadian businesses. Business leaders frequently put forward the argument that various environmental regulations and processes will cost too much and will thus put Canadian business in an uncompetitive position. The following section considers how business finances environmental expenditures, and what effect these expenditures have on profits and competitive positions.

4.5.1 FINANCING ENVIRONMENTAL EXPENDITURES

4.5.1.1 COMPANY SIZE (1989 EXPENDITURES)

More than half the companies who spent money in fiscal 1989 on environmental protection measures financed those expenditures through profit re-investment and or cash flow. For companies with less than 50 employees, this method of financing was used by six in ten companies (versus 42% of 50 plus employee companies). The next most common method of financing environmental expenditures was through short term bank debt.

In general, larger businesses tended to use a greater variety of financing methods than did small business. This included both long and short term bank debt, equity issues and the use of government funding. However, it is also interesting to note, that almost one in three of the large business respondents declined to answer this question (indicating a certain reticence to provide this type of information).

(Reference: Table 79)

4.5.1.2 REGIONAL DIFFERENCES (1989 EXPENDITURES)

On a regional basis, there are some differences to be noted. Nearly one quarter of all companies who spent on environmental measures in 1989 in Quebec indicated that they used equity to finance those expenditures. This is significantly higher than in any other region. Quebec based firms were also slightly less likely to use profit re-investment or short term bank debt than were companies in other regions. Companies in the east were marginally more likely to have used government funding.

(Reference: Table 80)

4.5.1.3 FUTURE FINANCING METHODS

When asked to indicate the financing method they would most likely use in the future, only minor differences ,can be noted. For example, companies indicated that they will be less likely to use profit re-investment, but will look to the government for greater assistance.

(Reference: Tables 81-82)

TABLE 77

TOTAL ENVIRONMENTAL DOLLARS SPENT TO MEET REGULATIONS

AVERAGE % OF TOTAL 1989

COMPANY SIZE

	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
FEDERAL	9.7	9.9	9.8
PROVINCIAL	22.7	39.2	35.2
MUNICIPAL	6.4	14.5	12.6
ADDITIONAL EXPENDITURES	61.2	14.5	42.4

** NOTE: LESS THAN 50 EMPLOYEE FIGURES ARE BASED ON A SMALL NUMBER OF THE MAILED QUESTIONNAIRES

TABLE 78

TOTAL ENVIRONMENTAL DOLLARS SPENT TO MEET REGULATIONS

AVERAGE % OF TOTAL 1989

REGIONS

	WEST	ONTARIO	QUEBEC	EAST	TOTAL SAMPLE
FEDERAL	11.4	8.3	6.8	19.4	9.8
PROVINCIAL	32.6	36.8	39.1	25.1	35.2
MUNICIPAL	10.7	16.1	8.9	7.2	12.6
ADDITIONAL EXPENDITURES	45.3	38.8	45.2	48.3	42.4

TABLE 79

FINANCING METHODS USED FOR ENVIRONMENTAL EXPENDITURES

THOSE WHO SPENT IN 1989

COMPANY SIZE

TOTAL COMPANIES WHO SPENT IN 1989	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
REGIONAL HORIZONTAL %	58	43	100
	677 %	504 %	1182 %
SHORT TERM BANK DEBT	10	17	13
LONG TERM BANK DEBT	7	12	9
COMMERCIAL PAPER	**	1	1
LONG TERM BONDS	**	1	1
EQUITY	7	10	8
ASSET SALES	2	2	2
PROFIT RE-INVESTMENT/CASH FLOW	61	42	53
GOVERNMENT FUNDS OR GRANTS	3	7	5
REFUSED	1	1	1
DOES NOT KNOW	1	1	1
NOT ANSWERED	6	29	16
NONE USED	9	7	8

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 80

FINANCING METHODS USED FOR ENVIRONMENTAL EXPENDITURES

THOSE WHO SPENT IN 1989

REGIONS

TOTAL COMPANIES WHO SPENT IN 1989	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	25	45	22	115	100
	285 %	529 %	252 %	115 %	1181 %
SHORT TERM BANK DEBT	15	14	10	7	13
LONG TERM BANK DEBT	8	9	9	12	9
COMMERCIAL PAPER	1	1	**	-	1
LONG TERM BONDS	1	**	**	-	1
EQUITY	3	4	24	4	8
ASSET SALES	2	2	2	-	2
PROFIT RE-INVESTMENT/CASH FLOW	57	53	49	50	53
GOVERNMENT FUNDS OR GRANTS	5	4	4	9	5
REFUSED	**	1	-	1	1
DOES NOT KNOW	2	1	-	1	1
NOT ANSWERED	12	18	13	21	16
NONE USED	8	9	6	8	8

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 81

FINANCING METHODS WILL USE IN THE NEXT 10 YEARS FOR ENVIRONMENTAL EXPENDITURES

COMPANY SIZE

TOTAL COMPANIES WHO SPENT IN 1989	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	58	43	100
	677	504	1181
SHORT TERM BANK DEBT	9	15	11
LONG TERM BANK DEBT	8	17	12
COMMERCIAL PAPER	1	1	1
LONG TERM BONDS	**	2	1
EQUITY	6	10	8
ASSET SALES	2	3	2
PROFIT RE-INVESTMENT/CASH FLOW	52	41	47
GOVERNMENT FUNDS OR GRANTS	9	12	10
REFUSED	1	1	1
DOES NOT KNOW	7	2	5
NOT ANSWERED	7	31	17
NONE USED	10	5	8

NOTE: MULTIPLE MENTIONS
**LESS THAN 0.5%

TABLE 82

FINANCING METHODS WILL USE IN THE NEXT 10 YEARS FOR ENVIRONMENTAL EXPENDITURES

REGIONS

TOTAL COMPANIES WHO SPENT IN 1989	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	25	45	22	10	100
	285	529	252	115	1181
SHORT TERM BANK DEBT	14	13	8	6	11
LONG TERM BANK DEBT	12	10	13	15	12
COMMERCIAL PAPER	1	1	1	-	1
LONG TERM BONDS	1	1	2	-	1
EQUITY	4	3	22	6	8
ASSET SALES	2	2	2	2	2
PROFIT RE-INVESTMENT/ CASH FLOW	51	47	41	48	47
GOVERNMENT FUNDS OR GRANTS	10	13	6	12	10
REFUSED	**	2	-	1	1
DOES NOT KNOW	7	3	6	4	5
NOT ANSWERED	13	20	16	18	17
NONE USED	8	9	5	7	8

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

4.5.2 WHETHER ENVIRONMENTAL PROTECTION EXPENDITURES HAVE AFFECTED PRODUCT COSTS OR PROFITABILITY

4.5.2.1 WHETHER HAVE HAD TO RAISE PRODUCT COSTS

Amongst those businesses that had spent money on environmental protection measures, slightly less than a quarter indicated that they had to raise product costs. A marginally higher percentage of small companies stated they raised product costs. There are no differences to be noted on a regional basis.

More than half (55%) of those companies who did raise product costs did so by less than 5%. A further 22% indicated that they raised product costs by between 5 and 10%, while only 8% stated that they raised their prices by more than 10%. Companies in Ontario tended to raise their prices the most, with 28% stated they increased product cost by 5 to 10%. Conversely, companies in Quebec and the east tended to raise their prices the least, likely because these regions spent less on environmental protection than did the others.

(Reference: Tables 83-86)

4.5.2.2 PERCENTAGE WILL HAVE TO RAISE PRODUCT COSTS IN NEXT FIVE YEARS

Respondents were also asked to indicate what percentage they expected to have to raise product costs in the next five years due to environmental expenditures. Overall, a third indicated that they did not expect to have to raise prices at all, while an equal proportion did not provide an answer. Of the four regions, a larger percentage of companies in the west felt that they would not have to raise product prices.

(Reference: Tables 87-88)

4.5.2.3 WHETHER HAVE HAD TO ACCEPT A LOWER PROFIT MARGIN

Overall, a larger percentage of companies surveyed indicated that they have had to accept a lower profit margin, than raise their product cost. More than a third stated that their margins have been cut due to environmental protection costs. Forty-six percent of those who took a hit on their margins indicated that the cut was between 1 and 4%. Two in ten stated that they had to accept a lower margin of between 5 and 10%. There are no significant differences to be noted when analyzing this data by company size. However, companies in the eastern region stated that overall, they had to accept a larger decline in profit margin than did companies elsewhere in Canada.

(Reference: Tables 89-92)

4.5.2.4 EXPECTED DECLINE IN PROFIT MARGIN IN NEXT FIVE YEARS DUE TO ENVIRONMENTAL PROTECTION COSTS

As with the results from the question concerning increasing product costs, about a third of all businesses did not expect to have to cut their profit margin in the next five years due to environmental costs. Again, as previously, approximately a third indicate that they do not know what effect environmental expenditures will have on their profit margins.

(Reference: Tables 93-94)

4.5.3 EFFECT OF ENVIRONMENTAL EXPENDITURES ON COMPETITIVE POSITION

4.5.3.1 CANADIAN COMPETITIVE POSITION

4.5.3.1.1 COMPANY SIZE

Overall, current environmental regulations do not appear to be adversely affecting the competitive position of business within Canada. Almost six in ten companies surveyed stated that current environmental regulations are having a neutral effect on their Canadian competitive position. Two thirds of large companies felt this way. Twenty-eight percent stated that environmental regulations are having a positive effect on their Canadian competitive position.

(Reference: Table 95)

4.5.3.1.2 REGIONAL DIFFERENCES

On a regional basis, a higher percentage of companies in the west tended to believed that current regulations have a neutral effect (64%) than elsewhere in the country. Conversely, better than four in ten businesses in Quebec stated that current regulations are having a positive effect on their Canadian competitive position.

(Reference: Table 96)

4.5.3.2 INTERNATIONAL COMPETITIVE POSITION

4.5.3.2.1 COMPANY SIZE

Only the larger firms were asked how current regulations affect their international competitive position. (As was noted earlier, some of the companies originally included in the 50 plus employee size mail survey had down sized by the time the study was completed and thus appear in the less than 50 employee grouping.) A third indicated that they do not export, while another third stated than current regulations are having a neutral effect. However, on an international basis, twice as many businesses feel that current standards are having a negative effect than a positive effect.

(Reference: Table 97)

4.5.3.2.2 REGIONAL DIFFERENCES

On a regional basis close to half of all the larger firms in Quebec stated that they do not export compared with 27% in Ontario. A larger proportion of businesses in Ontario felt that current environmental regulations are having a negative effect on their international competitive position than in any other region.

(Reference: Table 98)

4.5.3.3 EFFECT OF ENVIRONMENT STANDARDS ON COMPANIES FUTURE COMPETITIVE POSITION

4.5.3.3.1 COMPANY SIZE

Looking into the future, business generally believes that new environmental regulations will not adversely affect their competitive position. More than seventy percent of all surveyed companies indicated that they expect future regulations will have a neutral or positive effect. Interestingly, it is the larger businesses that are most pessimistic about the effect of future regulations, with a third indicating new regulations would have a negative effect on the competitive position of business.

(Reference: Table 99)

4.5.3.3.2 REGIONAL DIFFERENCES

On a regional basis, the largest percentage of businesses in Quebec again stated that they believed future regulations would have a positive effect. Respondents in Ontario tended to be the most negative of any region.

(Reference: Table 100)

TABLE 83

WHETHER COMPANY HAS HAD TO RAISE PRODUCT COSTS FOR ENVIRONMENTAL PROTECTION

COMPANY SIZE

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONAL %	58	43	100
	677 %	504 %	1181 %
YES	25	20	23
NO	68	68	68
REFUSED/DON'T KNOW/NA	7	12	9

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 84

PERCENT BY WHICH PRODUCT PRICES WERE RAISED

COMPANIES WHO HAD TO RAISE PRODUCT PRICE	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	63	38	100
	169 %	101 %	270 %
1%	18	33	24
2%	17	15	16
3%	11	7	10
4%	5	4	5
5-10%	22	21	22
11-20%	4	3	4
21-30%	4	1	2
31% OR MORE	4	-	2
REFUSED/DK/NA	16	17	17

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 85

WHETHER COMPANY HAS HAD TO RAISE PRODUCT COSTS FOR ENVIRONMENTAL PROTECTION

REGIONS

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	WEST	ONTARIO	QUEBEC	EAST	TOTAL
HORIZONTAL %	25	45	22	10	100
	285 %	529 %	252 %	115 %	1181 %
YES	22	24	21	23	23
NO	69	65	71	70	68
REFUSED/DON'T KNOW	9	10	8	7	9

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 86

PERCENTAGE BY WHICH PRODUCT PRICES WERE RAISED

COMPANY SIZE

TOTAL COMPANIES WHO HAD TO RAISE PRODUCT PRICE	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	23	48	20	10	100
	62 %	128 %	54 %	26 %	270 %
1%	18	23	28	31	24
2%	19	13	20	15	16
3%	15	7	11	8	10
4%	5	5	4	4	5
5-10%	21	28	9	19	22
11-20%	6	2	6	4	4
21-30%	5	2	-	-	2
31% OR MORE	3	1	2	4	2
REFUSED/DON'T KNOW/NA	18	19	20	15	15

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 87

PERCENTAGE BY WHICH PRICES WILL BE RAISED IN THE NEXT 5 YEARS

COMPANY SIZE

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	57	43	100
	677 %	504 %	1181 %
ZERO %	32	35	33
1%	7	11	9
2%	6	6	6
3%	3	3	3
4%	1	1	1
5-10%	12	12	12
11-20%	3	1	2
21-30%	**	**	**
31% OR MORE	2	1	1
REFUSED/DK/NA	33	30	32

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING
** LESS THAN 0.5%

TABLE 88

PERCENTAGE BY WHICH PRICES WILL BE RAISED IN THE NEXT 5 YEARS

REGIONS

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	25	45	22	10	100
	285 %	529 %	252 %	115 %	1181 %
ZERO %	40	34	24	37	33
1%	6	10	9	10	9
2%	5	6	7	7	6
3%	5	2	4	3	3
4%	2	1	2	2	1
5-10%	13	13	8	10	12
11-20%	2	2	3	2	2
21-30%	**	1	**	-	**
31% OR MORE	2	2	-	1	1
REFUSED/DON'T KNOW/NA	25	31	43	30	32

NOTE: MAY NOT ADD TO 100% DUE TO ROUNDING
** LESS THAN 0.5%

TABLE 89

COMPANY SIZE

WHETHER HAD TO ACCEPT A LOWER PROFIT MARGIN DUE TO ENVIRONMENTAL COSTS

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	58	43	100
	677 %	504 %	1181 %
YES	36	35	36
NO	57	55	56
REFUSED/DON'T KNOW/NA	7	10	8

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 90

PERCENT BY WHICH PROFIT MARGIN HAS FALLEN DUE TO ENVIRONMENTAL COSTS

TOTAL COMPANIES WHO HAD LOWER MARGINS	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	58	42	100
	243 %	177 %	420 %
ZERO	1	2	1
1%	23	28	25
2%	14	12	13
3%	8	4	6
4%	3	1	2
5-10%	21	19	20
11-20%	4	5	5
21-30%	1	1	1
31% OR MORE	6	1	4
REFUSED/DK/NA	20	28	23

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 91

WHETHER HAD TO ACCEPT A LOWER PROFIT MARGIN DUE TO ENVIRONMENTAL COSTS

REGIONS

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	25	45	22	10	100
	285 %	529 %	252 %	115 %	1181 %
YES	39	34	34	37	36
NO	51	56	61	59	56
REFUSED/DON'T KNOW/NA	11	9	5	4	8

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 92

PERCENT BY WHICH PROFIT MARGIN HAS FALLEN DUE TO ENVIRONMENTAL COSTS

TOTAL COMPANIES WHO HAD LOWER MARGINS	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	26	43	20	10	100
	111 %	182 %	85 %	42 %	420 %
ZERO	2	1	2	-	1
1%	27	25	21	26	25
2%	12	13	16	12	13
3%	9	5	7	2	6
4%	1	3	2	-	2
5-10%	18	23	13	29	20
11-20%	5	3	7	5	5
21-30%	2	1	-	-	1
31% OR MORE	4	2	8	2	4
REFUSED/DON'T KNOW/NA	22	25	26	24	24

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 93

EXPECTED PERCENTAGE DECLINE IN PROFIT MARGIN IN NEXT 5 YEARS DUE TO ENVIRONMENTAL COSTS

	COMPANY SIZE		
TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	57	43	100
	677 %	504 %	1181 %
ZERO	28	38	32
1%	8	11	9
2%	6	6	6
3%	3	3	3
4%	2	1	1
5-10%	10	10	10
11-20%	2	2	2
21-30%	1	1	1
31% OR MORE	2	-	1
REFUSED/DK/NA	38	30	34

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 94

EXPECTED PERCENTAGE DECLINE IN PROFIT MARGIN IN NEXT 5 YEARS DUE TO ENVIRONMENTAL COSTS

REGIONS

TOTAL COMPANIES WHO SPENT ON ENVIRONMENTAL PROTECTION	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	25	45	22	10	100
	285 %	529 %	252 %	115 %	1181 %
ZERO %	31	35	27	34	32
1%	10	9	10	12	9
2%	5	7	5	8	6
3%	4	3	4	3	3
4%	1	1	2	-	1
5-10%	15	9	7	9	10
11-20%	1	3	2	3	2
21-30%	1	**	1	1	1
31% OR MORE	1	**	3	-	1
REFUSED/DON'T KNOW/NA	31	34	40	31	34

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING
** LESS THAN 0.5%

TABLE 95

EFFECT OF CURRENT ENVIRONMENTAL STANDARDS ON CANADIAN COMPETITIVE POSITION

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	78	22	100
	1814 %	507 %	2321 %
POSITIVE EFFECT	32	12	28
NEGATIVE EFFECT	11	15	12
NEUTRAL EFFECT	54	65	57
DOES NOT KNOW	1	**	1
NOT ANSWERED	1	7	3

NOTE: ** MENTIONED BY LESS THAN 0.5%

TABLE 96

EFFECT OF CURRENT ENVIRONMENTAL STANDARDS ON CANADIAN COMPETITIVE POSITION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	20	51	19	10	100
	734 %	887 %	468 %	232 %	2321 %
POSITIVE EFFECT	24	23	42	31	28
NEGATIVE EFFECT	10	14	11	11	12
NEUTRAL EFFECT	64	58	44	55	57
DOES NOT KNOW	1	1	2	1	1
NOT ANSWERED	2	4	2	2	3

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 97

EFFECT OF CURRENT ENVIRONMENTAL STANDARDS ON COMPANIES INTERNATIONAL COMPETITIVE POSITION

COMPANY SIZE

TOTAL MAIL OUT COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	23	77	100
	146 %	497 %	643 %
POSITIVE EFFECT	9	6	7
NEGATIVE EFFECT	7	17	14
NEUTRAL EFFECT	24	36	33
DO NOT EXPORT	40	31	33
DOES NOT KNOW/N.A.	20	10	12

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 98

EFFECT OF CURRENT ENVIRONMENTAL STANDARDS ON COMPANIES INTERNATIONAL COMPETITIVE POSITION

REGIONS

TOTAL MAIL OUT COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
	32	38	20	10	100
REGIONAL HORIZONTAL %	130 %	327 %	123 %	63 %	643 %
POSITIVE EFFECT	5	7	4	13	7
NEGATIVE EFFECT	11	17	12	16	14
NEUTRAL EFFECT	38	35	30	25	33
DOES NOT EXPORT	36	27	45	37	33
DOES NOT KNOW/NA	9	15	9	10	12

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 99

EFFECT OF FUTURE ENVIRONMENTAL STANDARDS ON COMPANIES OVERALL COMPETITIVE POSITION

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	78	22	100
	1814 %	507 %	2321 %
POSITIVE EFFECT	36	15	31
NEGATIVE EFFECT	21	34	23
NEUTRAL EFFECT	39	42	40
DOES NOT KNOW	4	1	3
NOT ANSWERED	1	7	3

** LESS THAN 0.5%
NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

TABLE 100

EFFECT OF FUTURE ENVIRONMENTAL STANDARDS ON COMPANIES OVERALL COMPETITIVE POSITION

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	32	38	20	10	100
	734 %	887 %	468 %	232 %	2321 %
POSITIVE EFFECT	30	26	41	35	31
NEGATIVE EFFECT	24	27	17	21	23
NEUTRAL EFFECT	40	40	38	39	40
DOES NOT KNOW	4	3	3	3	3
NOT ANSWERED	1	4	2	2	3

NOTE: COLUMNS MAY NOT ADD TO 100% DUE TO ROUNDING

5.0 ENVIRONMENTAL ACTION

5.1 ENVIRONMENTAL ACTIONS TAKEN IN THE PAST TWO YEARS

5.1.1 COMPANY SIZE

To finish the interview, respondents were asked a few questions related to the types of environmental actions or policies taken by their business. Overall, business people have been relatively inactive in terms of setting the agenda for environmental issues. More than half the respondents stated that they had not done anything like contracting an environmental consultant, appointed a specific official in their company to address environmental issues or joining an industry lobby group.

As would be expected, larger companies tended to be much more involved in environmental issues than did the smaller companies. For example, slightly more than half the larger companies stated that they had met with environmental regulators in the past two years, versus only 16% of the small businesses. Almost a third of the larger companies had appointed a specific individual to deal with environmental issues. More than two in ten of the large companies had participated in an environmental assessment study.

(Reference: Table 101)

5.1.2 REGIONAL DIFFERENCES

On a regional basis, there are some minor differences to be noted. Although as seen earlier, Quebec based firms spent less on average on environmental protection, almost a third stated that they had meet with environmental regulators in the past two years. In general companies in central Canada appear to be more proactive than companies in the west or the east.

(Reference: Table 102)

5.2 ENVIRONMENTAL ACTIONS WILL TAKE IN THE NEXT TWO YEARS

When asked about the types of action they will take in the two years, it is interesting to note that business does not foresee doing things dramatically differently than they do now. Large businesses stated that they will continue to be much more involved in environmental issues than did the smaller companies.

(Reference: Tables 103-104)

5.3 RESPONSIBILITY FOR SETTING ENVIRONMENTAL STANDARDS

5.3.1 COMPANY SIZE

Finally, companies were asked to indicate who should be responsible for setting and implementing environmental standards. Overall, about half the respondents felt that it is the responsibility of some combination of business, provincial and federal governments. Less than a third thought that municipal governments should be involved in implementing environmental standards. Interestingly, there is very little difference between the attitudes of large and small business on this issue.

(Reference: Table 105)

5.3.2 REGIONAL DIFFERENCES

However, on a regional basis, Quebec based businesses again deviate from the attitudes of other regions. Perhaps not surprisingly, a much higher percentage of Quebec businesses feel that the provincial government should be responsible and a lower proportion think the federal government should set standards. Quebec business also stated that municipal government should be involved to a much greater degree than in any other region.

(Reference: Table 106)

5.3.3 INDUSTRY SECTOR

Lastly, the data shows that there are some major differences by industry sector as to who should be most responsible for implementing environmental standards. Companies in the agricultural, coal/oil and gas extraction, "other" mining, personal and business services and health services sectors are much more likely to believe that business should be responsible than are companies in other sectors.

With the exception of health services, there are few significant differences to be noted by sector regarding municipal involvement. A higher proportion of firms in the "other" mining, primary metal fabrication and health services sectors stated that provincial governments should be most responsible than did other sectors.

Companies in the textile/printing/leather products sector, chemicals, oil/coal/rubber products sector, local and air transport sector and health services are much more likely to state that the federal government should have the prime responsibility. Overall, perhaps one of the most heavily regulated sectors, health services, has indicated that all parties need to be involved in environmental regulation.

(Reference: Table 107)

TABLE 101

TYPES OF ENVIRONMENTAL ACTION TAKEN IN THE PAST TWO YEARS

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	77	23	100
	1837 %	556 %	2393 %
HIRED ENVIRONMENTAL CONSULTANTS	4	28	9
APPOINTED CO. OFFICIAL FOR ENVIRONMENTAL AFFAIRS	4	31	10
CONSULTED/MEET WITH ENVIRONMENTAL REGULATORS	16	51	24
CONSULTED/MEET WITH ENVIRONMENTAL PRESSURE GROUP	4	12	5
JOINED INDUSTRY LOBBY GROUP	7	16	9
SUBJECTED TO AN ENVIRONMENTAL ASSESSMENT STUDY	6	23	10
NONE OF THESE	66	18	55
ALL OF THESE	**	1	**
DON'T KNOW/NOT STATED NOT ANSWERED	2	5	3

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 102

TYPES OF ENVIRONMENTAL ACTION TAKEN IN THE PAST TWO YEARS

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	31	38	20	10	100
	750 %	919 %	483 %	241 %	2393 %
HIRED ENVIRONMENTAL CONSULTANTS	6	13	7	9	9
APPOINTED CO. OFFICIAL FOR ENVIRONMENTALAFFAIRS	6	14	11	5	10
CONSULTED/MEET WITH ENVIRONMENTAL REGULATIORS	16	26	31	25	24
CONSULTED/MEET WITH ENVIRONMENTAL PRESSURE GROUP	5	6	5	6	5
JOINED INDUSTRY LOBBY GROUP	9	10	8	6	9
SUBJECTED TO AN ENVIRONMENTAL ASSESSMENT STUDY	6	13	10	12	10
NONE OF THESE	68	49	45	55	55
ALL OF THESE	**	**	**	**	**
REFUSED/DON'T KNOW/NA	2	4	3	3	3

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 103

TYPES OF ENVIRONMENTAL ACTION WILL TAKE IN THE NEXT TWO YEARS

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORIZONTAL %	77	23	100
	1837 %	556 %	2393 %
HIRED ENVIRONMENTAL CONSULTANTS	3	26	8
APPOINT CO. OFFICIAL FOR ENVIRONMENTAL AFFAIRS	3	18	6
CONSULT/MEET WITH ENVIRONMENTAL REGULATORS	13	38	19
CONSULT/MEET WITH ENVIRONMENTAL PRESSURE GROUP	3	13	5
JOIN INDUSTRY LOBBY GROUP	5	14	7
PARTICIPATE IN AN ENVIRONMENTAL ASSESSMENT STUDY	5	18	8
NONE OF THESE	62	14	51
ALL OF THESE	**	1	**
DON'T KNOW/NOT STATED NOT ANSWERED	13	17	14

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 104

TYPES OF ENVIRONMENTAL ACTION WILL TAKE IN THE NEXT TWO YEARS

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	31	38	20	10	100
	750 %	919 %	483 %	241 %	2393 %
HIRED ENVIRONMENTAL CONSULTANTS	6	11	6	7	8
APPOINTED CO. OFFICIAL FOR ENVIRON. AFFAIRS	4	8	6	5	6
CONSULTED/MEET WITH ENVIRONMENTAL REGULATORS	13	21	25	20	19
CONSULTED/MEET WITH ENVIRONMENTAL PRESSURE GROUP	5	5	4	8	5
JOINED INDUSTRY LOBBY GROUP	8	7	7	5	7
SUBJECTED TO AN ENVIRONMENTAL ASSESSMENT STUDY	5	9	8	9	8
NONE OF THESE	60	47	45	50	51
ALL OF THESE	**	1	**	-	**
REFUSED/DON'T KNOW/NA	14	11	12	16	14

NOTE: MULTIPLE MENTIONS
** LESS THAN 0.5%

TABLE 105

WHO SHOULD BE MOST RESPONSIBLE FOR IMPLEMENTING ENVIRONMENTAL REGULATIONS

COMPANY SIZE

TOTAL COMPANIES	LESS THAN 50 EMPS.	50 EMPS. OR MORE	TOTAL SAMPLE
HORZONTAL %	77	23	100
	1837 %	556 %	2393 %
BUSINESS/INDUSTRY	48	47	48
MUNICIPAL GOVERNMENT	30	24	29
PROVINCIAL GOVERNMENT	52	48	51
FEDERAL GOVERNMENT	52	49	51

NOTE: MULTIPLE MENTIONS

TABLE 106

WHO SHOULD BE MOST RESPONSIBLE FOR IMPLEMENTING ENVIRONMENTAL REGULATIONS

REGIONS

TOTAL COMPANIES	WEST	ONTARIO	QUEBEC	EAST	TOTAL
REGIONAL HORIZONTAL %	31	38	20	10	100
	750 %	919 %	483 %	241 %	2393 %
BUSINESS/INDUSTRY	53	50	37	41	48
MUNICIPAL GOVERNMENT	27	26	41	21	29
PROVINCIAL GOVERNMENT	52	46	60	51	51
FEDERAL GOVERNMENT	52	53	42	61	51

NOTE: MULTIPLE MENTIONS

TABLE 107

WHO SHOULD BE MOST RESPONSIBLE FOR IMPLEMENTING ENVIRONMENTAL REGULATIONS

MAJOR SIC GROUPINGS

PERCENTAGE OF COMPANIES MENTIONING EACH	BUSINESS/ INDUSTRY	MUNICIPAL GOVERNMENT	PROVINCIAL GOVERNMENT	FEDERAL GOVERNMENT
	%	%	%	%
TOTAL COMPANIES	48	29	51	51
AGRICULTURE	61	34	56	36
FORESTRY/LUMBER/PAPER	44	31	52	51
METAL MINING	56	9	53	38
COAL/OIL/GAS	57	24	58	42
OTHER MINING	61	29	68	32
FOOD MANUFACTURING	48	21	38	53
TEXTILE/PRINTING/LEATHER	39	31	47	65
CHEMICALS	55	31	57	60
OIL/COAL/RUBBER PRODUCTS	50	29	52	61
STONE/CLAY/GLASS PROD.	47	24	53	47
PRIMARY METAL FABRIC.	52	32	64	45
MACH./TRANSPORT EQUIP.	44	24	36	52
LOCAL/AIR TRANSPORT	40	22	59	60
TRUCKING & WAREHOUSING	43	29	39	54
PIPELINE/ELECTRIC/GAS	41	18	59	36
WHOLESALE TRADE	47	27	50	45
AUTO DEALERS/SERVICE ST.	36	32	46	48
MISCELL. RETAIL & REPAIR	53	29	42	54
PERSONAL & BUSINESS SERV.	58	30	54	47
AUTO REPAIR	44	39	51	53
HEALTH SERVICES	61	42	68	73

APPENDIX A

ENVIRONMENTAL PROTECTION
STUDY # 4797-90

DUN & BRADSTREET CANADA
5770 Hurontario Street
Mississauga, Ontario
L5R 3G5
(416) 568-6162

DOE/CAP-260-03908

1) First of all, we need some background information about your company. How many business locations does your company have in Canada? Please include all offices, plants, warehouses and distribution centres that may be at separate locations. (MARK ONE BOX ONLY)

One .... ☐ 1
Two .... ☐ 2
Three .... ☐ 3
Four .... ☐ 4
Five .... ☐ 5

Six .... ☐ 6
Seven .... ☐ 7
Eight .... ☐ 8
Nine .... ☐ 9
Ten .... ☐ 10
Eleven or more
(WRITE IN NUMBER) _____

2) How many of your Canadian locations use or produce materials that may be harmful to the environment? This includes any raw material input, manufacturing process or by-product and final product that uses or produces substances that could cause air, water or solid waste pollution.
(MARK ONE BOX ONLY)

One .... ☐ 1
Two .... ☐ 2
Three .... ☐ 3
Four .... ☐ 4
Five .... ☐ 5

Six .... ☐ 6
Seven .... ☐ 7
Eight .... ☐ 8
Nine .... ☐ 9
Ten .... ☐ 10
Eleven or more
(WRITE IN NUMBER) _____

IF ONLY ONE LOCATION, PLEASE GO TO QUESTION 6. ALL OTHERS CONTINUE WITH QUESTION 3.

3a) Listed below are the provinces and territories in Canada. Please indicate for each province the number of locations where your company uses or produces materials that may be harmful to the environment.
(WRITE IN NUMBER BESIDE EACH APPROPRIATE PROVINCE OR TERRITORY)

Newfoundland	#_____	☐	Manitoba	#_____	☐
Prince Edward Island	#_____	☐	Saskatchewan ...	#_____	☐
Nova Scotia	#_____	☐	Alberta	#_____	☐
New Brunswick	#_____	☐	British Columbia	#_____	☐
Quebec	#_____	☐	N.W Territories	#_____	☐
Ontario	#_____	☐	Yukon	#_____	☐

3b) Please indicate the provinces or territories where your company may be establishing new facilities in the future that will use or produce materials that may be harmful to the environment. (MARK AS MANY BOXES AS APPLY)

4) Although the need for pollution control procedures and devices may be identified at the local level, in your company, where is the final decision made regarding pollution control issues and expenditures? (MARK ONE BOX ONLY)

Final decision made at local level .... ☐ 1 → GO TO QU. 5a

Final decision made at Canadian head office .... ☐ 2 → GO TO QU. 5a

Final decision made at International head office .... ☐ 3 → GO TO QU. 5b

5a) And are you located in the Canadian head office or at one of the local sites? (MARK ONE BOX ONLY)

Head Office .... ☐ 1 ⎤
Local Site .... ☐ 2 ⎦ GO TO QU. 6

5b) In what city and country is your international head office located? (PLEASE WRITE IN)

City: ______________________________

Country: ___________________________

6) The discharge of substances harmful to the environment is typically divided into three groupings: air pollution, water pollution and solid waste. Land management practices may also be a source of environmental problems. Please indicate the type of discharge or problems your company currently has to deal with, OR may have to deal with in the future. (MARK AS MANY BOXES AS APPLY)

Air pollution .... ☐ 1 → ANSWER QU. 7
Water pollution .... ☐ 2 → ANSWER QU. 8
Solid waste pollution .... ☐ 3 → ANSWER QU. 9
Land management practices .... ☐ 4 → ANSWER QU. 10

7a) Currently, which if any, of the listed types of devices to control AIR POLLUTION does your company have installed at any location in Canada? (MARK AS MANY BOXES AS APPLY)

	QU. 7a Currently Have	QU. 7b Next 3 Yrs	QU. 7c Next 10 Yrs
Absorption/Adsorption Systems	☐ 1	☐ 1	☐ 1
Air Handling Equipment	☐ 2	☐ 2	☐ 2
Catalytic Converters	☐ 3	☐ 3	☐ 3
Chemical Recovery Systems	☐ 4	☐ 4	☐ 4
Computer Hardware or Software Programs	☐ 5	☐ 5	☐ 5
Dust Collectors	☐ 6	☐ 6	☐ 6
Electrostatic Precipitators ..	☐ 7	☐ 7	☐ 7
Fabric Filters	☐ 8	☐ 8	☐ 8
Incinerators	☐ 9	☐ 9	☐ 9
Scrubbers - Dry	☐ 10	☐ 10	☐ 10
Scrubbers - Wet	☐ 11	☐ 11	☐ 11
OTHER (WRITE IN)	______	______	______
	______	______	______
NONE	☐ 99	☐ 99	☐ 99

7b) In just the next three years, that is until December 31, 1993, which if any, of the listed devices WILL your company be installing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

7c) And in just the next ten years, that is until December 31, 1999, which if any, of the listed devices do you expect your company will be installing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

8a) Currently, which if any, of the listed types of devices to control WATER POLLUTION does your company have installed at any location in Canada? (MARK AS MANY BOXES AS APPLY)

	QU. 8a Currently Have	QU. 8b Next 3 Yrs	QU. 8c Next 10 Yrs
Aeration Systems	[] 1	[] 1	[] 1
Biological Treatment Systems ...	[] 2	[] 2	[] 2
Centrifuges	[] 3	[] 3	[] 3
Chemical Feeding and Mixing Equipment	[] 4	[] 4	[] 4
Chemical Recovery Systems	[] 5	[] 5	[] 5
Computer Hardware or Software Programs	[] 6	[] 6	[] 6
Filters	[] 7	[] 7	[] 7
Gravity Sedimentation Systems ..	[] 8	[] 8	[] 8
Ion Exchange Systems	[] 9	[] 9	[] 9
Oil/Water Separation Equipment .	[] 10	[] 10	[] 10
Potable Water Treatment Systems	[] 11	[] 11	[] 11
Screens/Strainers	[] 12	[] 12	[] 12
Sewage Treatment Systems and Equipment	[] 13	[] 13	[] 13
Water Handling Products	[] 14	[] 14	[] 14
Water Purification Systems and Equipment	[] 15	[] 15	[] 15
OTHER (WRITE IN)	________	________	________
	________	________	________
NONE	[] 99	[] 99	[] 99

8b) In just the next three years, that is until December 31, 1993, which if any of the listed devices WILL your company be installing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

8c) And in just the next ten years, that is until December 31, 1999, which if any of the listed devices do you expect your company will be installing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

9a) Currently, which if any, of the listed types of devices to control SOLID WASTE POLLUTION does your company have installed at any location in Canada?
(MARK AS MANY BOXES AS APPLY)

	QU. 9a Currently Have	QU. 9b Next 3 Yrs	QU. 9c Next 10 Yrs
Computer Hardware or Software Programs	[] 1	[] 1	[] 1
Incineration	[] 2	[] 2	[] 2
Recycling Systems and Equipment	[] 3	[] 3	[] 3
Liquid Waste Collection Systems and Equipment (including storage)	[] 4	[] 4	[] 4
Solid Waste Collection Systems and Equipment (including storage)	[] 5	[] 5	[] 5
Waste Disposal Systems and Equipment (including storage)	[] 6	[] 6	[] 6
Waste Handling Systems and Equipment	[] 7	[] 7	[] 7
Waste Separation Systems and Equipment	[] 8	[] 8	[] 8
OTHER (WRITE IN)	________	________	________
	________	________	________
NONE	[] 99	[] 99	[] 99

9b) In just the next three years, that is until December 31, 1992, which if any of the listed devices WILL your company be installing at any location in Canada?
(MARK AS MANY BOXES AS APPLY)

9c) And in just the next ten years, that is until December 31, 1999, which if any of the listed devices do you expect your company will be installing at any location in Canada?
(MARK AS MANY BOXES AS APPLY)

10a) Currently, which if any of the listed LAND MANAGEMENT PRACTICES or products does your company use to protect the environment at any location in Canada? (MARK AS MANY BOXES AS APPLY)

	QU. 10a Currently Use	QU. 10b Next 3 Yrs	QU. 10c Next 10 Yrs
Computer Hardware or Software Programs	[] 1	[] 1	[] 1
Agricultural Soil and Water Conservation	[] 2	[] 2	[] 2
Organic Agriculture	[] 3	[] 3	[] 3
Reforestation	[] 4	[] 4	[] 4
Fisheries Management	[] 5	[] 5	[] 5
Forestry Conservation and Protection	[] 6	[] 6	[] 6
Water Resource Planning	[] 7	[] 7	[] 7
Rural Land Management	[] 8	[] 8	[] 8
Flood Plain Control	[] 9	[] 9	[] 9
Pest Control	[] 10	[] 10	[] 10
OTHER (WRITE IN)	______	______	______
	______	______	______
NONE	[] 99	[] 99	[] 99

10b) In just the next three years, that is until December 31, 1993, which if any, of the listed land management practices WILL your company be implementing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

10c) And in just the next ten years, that is until December 31, 1999, which if any of the listed land management practices do you expect your company will have to implement at any location in Canada? (MARK AS MANY BOXES AS APPLY)

11a) In addition to the actual devices used for the control of emissions, most treatment systems use various chemicals and measuring, monitoring instruments and control equipment. Currently, which if any, of the following chemical processes or monitoring equipment does your company use at any location in Canada?
(MARK AS MANY BOXES AS APPLY)

	QU. 11a Currently Have	QU. 11b Next 3 Yrs	QU. 11c Next 10 Yrs
Chemicals For Pollution Control			
Absorbents/Adsorbents	☐ 1	☐ 1	☐ 1
Agglomeration/Pelletizing	☐ 2	☐ 2	☐ 2
Bacteria/Enzymes	☐ 3	☐ 3	☐ 3
Cleaning Agents	☐ 4	☐ 4	☐ 4
Corrosion/Scale Control	☐ 5	☐ 5	☐ 5
Dust Control	☐ 6	☐ 6	☐ 6
Water Treatment	☐ 7	☐ 7	☐ 7
Measuring/Monitoring Equipment			
Air Quality Instruments	☐ 8	☐ 8	☐ 8
Groundwater Instruments	☐ 9	☐ 9	☐ 9
Water Quality Instruments	☐ 10	☐ 10	☐ 10
Sampling Systems	☐ 11	☐ 11	☐ 11
Combustion Controls	☐ 12	☐ 12	☐ 12
Computer Controls	☐ 13	☐ 13	☐ 13
Process Controls	☐ 14	☐ 14	☐ 14
Sensors	☐ 15	☐ 15	☐ 15
Data Acquisition Equipment ...	☐ 16	☐ 16	☐ 16
Electrical Control Equipment .	☐ 17	☐ 17	☐ 17
Scientific Research and Labs			
Analytical Instruments	☐ 18	☐ 18	☐ 18
Bacteriological Supplies	☐ 19	☐ 19	☐ 19
Calibration Equipment	☐ 20	☐ 20	☐ 20
Environmental Chambers	☐ 21	☐ 21	☐ 21
Laboratory Chemicals	☐ 22	☐ 22	☐ 22
Lab Data Acquisition Systems .	☐ 23	☐ 23	☐ 23
Laboratory Equipment	☐ 24	☐ 24	☐ 24
Lab Reagents and Supplies	☐ 25	☐ 25	☐ 25
OTHER (WRITE IN)	________	________	________
	________	________	________
NONE	☐ 99	☐ 99	☐ 99

11b) In just the next three years, that is until December 31, 1993 which if any, of the listed chemicals or measuring equipment WILL your company be installing at any location in Canada?
(MARK AS MANY BOXES AS APPLY)

11c) And in just the next ten years, that is until December 31, 1999, which if any, of the listed chemicals or measuring equipment do you expect your company will be installing at any location in Canada? (MARK AS MANY BOXES AS APPLY)

12a) Now we would like you to consider the costs associated with environmental control procedures at your company. Listed below are a number of areas where your company may be incurring capital and operating costs directly related to environmental protection procedures. For each of the listed items, please indicate how much your company spent in FISCAL 1989 at all locations in Canada. (WRITE IN EXACT AMOUNT - IF NOTHING WAS SPENT, PLEASE WRITE IN ZERO "0")

	QU. 12a FISCAL 1989	QU. 12b FISCAL 1990	QU. 12c FISCAL 1992
CAPITAL EXPENDITURES			
Purchased Capital Equipment	$	$	$
Leased Capital Equipment	$	$	$
Physical Plant Modifications	$	$	$
OPERATING EXPENDITURES			
Supplies - eg. chemicals, filters, protective clothing and replacement parts	$	$	$
Salaries/ Wages	$	$	$
Training/ Retraining	$	$	$
Storage - Containers	$	$	$
Storage - Warehousing	$	$	$
Waste Disposal	$	$	$
Shipping	$	$	$
Equipment Maintenance & Servicing	$	$	$
Land Management Expenditures	$	$	$

12b) In FISCAL 1990, how much will your company spend on each of the listed items at all locations in Canada? (WRITE IN EXACT - AMOUNT - IF NOTHING, PLEASE WRITE IN ZERO "0")

12c) And what do you expect that your company will spend in FISCAL 1992 on each of the listed items at all locations in Canada? (WRITE IN EXACT AMOUNT - IF NOTHING, PLEASE WRITE IN ZERO "0")

13a) To the best of your knowledge, what percentage of your TOTAL FISCAL 1990 budget will be accounted for by OPERATING AND CAPITAL costs associated with environmental protection? (WRITE IN PERCENTAGE)

FISCAL 1990 OPERATING COSTS |__|__|__|%

FISCAL 1990 CAPITAL COSTS |__|__|__|%

13b) In FISCAL 1992, what percentage of your TOTAL budget do you estimate will be accounted for by OPERATING AND CAPITAL costs associated with environmental protection? (WRITE IN PERCENTAGE)

FISCAL 1992 OPERATING COSTS |__|__|__|%

FISCAL 1992 CAPITAL COSTS |__|__|__|%

13c) And in FISCAL 1999, what percentage of your TOTAL budget do you estimate will be accounted for by OPERATING AND CAPITAL costs associated with environmental protection? (WRITE IN PERCENTAGE)

FISCAL 1999 OPERATING COSTS |__|__|__|%

FISCAL 1999 CAPITAL COSTS |__|__|__|%

14a) In FISCAL 1989, how much did your company spend at all locations in Canada to adhere to current environmental protection regulations? Please include both capital expenditures and operating costs. (WRITE IN EXACT AMOUNT - IF NOTHING SPENT PLEASE WRITE IN ZERO "0")

$|_|_|_|,|_|_|_|,|_|_|_|

14b) And of this amount, approximately what percentage would you say was spent to meet environmental regulations set by Federal, Provincial and Municipal bodies? (WRITE IN PERCENTAGE - IF NOTHING SPENT, PLEASE ENTER ZERO "0")

Federal |__|__|__|%

Provincial |__|__|__|%

Municipal |__|__|__|%

15) How much did your company spend in FISCAL 1989 on environmental protection that EXCEEDED current regulated standards? (WRITE IN AMOUNT -- IF NOTHING PLEASE ENTER ZERO "0")

$|_|_|_|,|_|_|_|,|_|_|_|

D&B

16a) The cost to implement environmental control procedures can often be massive. Over just the past five years, which if any of the following methods has your company used to finance environmental equipment acquisition and operating costs? (MARK AS MANY BOXES AS APPLY)

	QU. 16a Past 5 Yrs	QU. 16b Next 10 Yrs
Short term bank debt	☐ 1	☐ 1
Long term bank debt	☐ 2	☐ 2
Commercial Paper	☐ 3	☐ 3
Long term bonds	☐ 4	☐ 4
Equity	☐ 5	☐ 5
Asset sales	☐ 6	☐ 6
Profit re-investment/cash flow......	☐ 7	☐ 7
Government funds or grants from any level	☐ 8	☐ 8
OTHER (WRITE IN)	______	______
	______	______

16b) And in just the next ten years, which if any, of the listed methods do you expect your company will have to use to finance environmental equipment acquisition and operating costs? (MARK AS MANY BOXES AS APPLY)

17a) Has your company had to increase product costs to help recover the cost of environmental control procedures? (MARK ONE BOX ONLY)

Yes .... ☐ 1 → ANSWER QU. 17b/c

No .... ☐ 2 → GO TO QU. 17c

17b) By what percentage has your product cost risen to cover environmental control procedures? (WRITE IN PERCENTAGE)

|__|__|__| %

17c) And in just the next five years, what percentage of the rise in your product cost will be directly attributable to environmental control procedures? (WRITE IN PERCENTAGE)

|__|__|__| %

18a) Has your company had to accept a lower profit margin to help recover the cost of environmental control procedures? (MARK ONE BOX ONLY)

Yes .... ☐ 1→ANSWER QU 18b/c

No .... ☐ 2→GO TO QU. 18c

18b) By what percentage has your profit margin fallen to cover environmental control procedures? (WRITE IN PERCENTAGE)

¦__¦__¦__¦ %

18c) And in just the next five years, what percentage decline in your profit margin will be directly attributable to environmental control procedures? (WRITE IN PERCENTAGE)

¦__¦__¦__¦ %

19a) Do you believe that current environmental standards have had a positive, negative or neutral effect on your company's CANADIAN competitive position? (MARK ONE BOX ONLY)

Positive effect .... ☐ 1

Negative effect .... ☐ 2

Neutral effect .... ☐ 3

19b) And do you believe that current environmental standards have had a positive, negative or neutral effect on your company's INTERNATIONAL competitive position? (MARK ONE BOX ONLY)

Positive effect .... ☐ 1

Negative effect .... ☐ 2

Neutral effect .... ☐ 3

Do not export .... ☐ 4

19c) As Canadian society demands more environmental regulation and legislation, overall will this have a positive, negative or neutral effect on your company's competitive position? (MARK ONE BOX ONLY)

Positive effect .... ☐ 1

Negative effect .... ☐ 2

Neutral effect .... ☐ 3

20a) In just the past two years, which if any of the following actions has your company taken or been involved in? (MARK AS MANY BOXES AS APPLY)

	QU 20a Past 2 Yrs	QU 20b Next 2 Yrs
Hired the services of an environmental consultant	☐ 1	☐ 1
Appointed a company official responsible for environmental affairs	☐ 2	☐ 2
Consulted/meet with environmental regulatory officials	☐ 3	☐ 3
Consulted/meet with environmental pressure groups/lobbies	☐ 4	☐ 4
Formed/joined an industry lobby group on environmental issues	☐ 5	☐ 5
Been subjected to an Environmental Assessment Report/Study	☐ 6	☐ 6
None of these	☐ 7	☐ 7

20b) In just the next two years, which if any, of the listed actions do you think your company will take or be involved in? (MARK AS MANY BOXES AS APPLY)

21) In your opinion, who should be MOST responsible for implementing and/or regulating environmental control standards? (READ LIST - MARK AS MANY BOXES AS APPLY)

- Business/Industry .... ☐ 1
- Municipal Government .... ☐ 2
- Provincial Government .... ☐ 3
- Federal Government .... ☐ 4

22) Finally, environmental protection has become one of the most pressing issues facing Canadian society. In your opinion, what are the key issues and problems faced by Canadian business with regards to environmental protection? (PLEASE BE AS SPECIFIC AS POSSIBLE)

THANK YOU FOR YOUR TIME AND CO-OPERATION. PLEASE RETURN THE QUESTIONNAIRE IN THE STAMPED SELF-ADDRESSED ENVELOPE TODAY.

ENVIRONMENTAL STUDY
#4797/90

DUN & BRADSTREET CANADA
5770 HURONTARIO STREET
MISSISSAUGA, ONTARIO
L5R 3G5
(416) 568-6162

Good______________it's______________calling from Dun & Bradstreet. May I speak to (PERSON LISTED ON DMI OR CHIEF FINANCIAL OFFICER). IF UNAVAILABLE ARRANGE FOR A CALLBACK.

As you know, environmental issues and concerns have become more prevalent in our society. These issues and concerns have affected both the public and industry. Dun & Bradstreet is conducting a large scale study of the current and planned corporate expenditures for environmental control by Canadian business. We have randomly selected your company from our database of companies in your industry. Your participation is therefore crucial to the success of this research study. Any information that you provide will be held in strictest confidence.

1) How many business locations does your company have in Canada? (Include all branch locations, offices, plants, warehouses and distribution centres.
(DO NOT READ, CIRCLE ONE ONLY)

ONE.........1
TWO.........2
THREE.......3
FOUR........4
FIVE........5
ELEVEN OR MORE______________
(WRITE IN NUMBER)

SIX............6
SEVEN..........7
EIGHT..........8
NINE...........9
TEN...........10

2) How many of your Canadian locations use or produce materials that may be harmful to the environment? This includes any raw material input, manufacturing process or by-product and final product that uses or produces substances that could cause air, water, or solid waste pollution.
(DO NOT READ, CIRCLE ONE ONLY)

ONE.........1
TWO.........2
THREE.......3
FOUR........4
FIVE........5
ELEVEN OR MORE______________
(WRITE IN NUMBER)

SIX..............6
SEVEN............7
EIGHT............8
NINE.............9
TEN.............10

(IF ONLY ONE LOCATION, SKIP TO QU.5, ALL OTHERS, CONTINUE WITH QU.3)

3a) In which provinces or territories does your company use or produce materials that may be harmful to the environment? (DO NOT READ. CIRCLE AS MANY AS APPLY)

NEWFOUNDLAND....................1 ☐☐☐
PRINCE EDWARD ISLAND............2 ☐☐☐
NOVA SCOTIA.....................3 ☐☐☐
NEW BRUNSWICK...................4 ☐☐☐
QUEBEC..........................5 ☐☐☐
ONTARIO.........................6 ☐☐☐
MANITOBA........................7 ☐☐☐
SASKATCHEWAN....................8 ☐☐☐
ALBERTA.........................9 ☐☐☐
BRITISH COLUMBIA...............10 ☐☐☐
N.W. TERRITORIES...............11 ☐☐☐
YUKON TERRITORY................12 ☐☐☐

3b) And how many locations in (PROV/TERR) use or produce materials that may be harmful to the environment? ⟶

4) In the future which provinces or territories will you be adding new locations or facilities that will use or produce material that may be harmful to the environment? (DO NOT READ, CIRCLE AS MANY AS APPLY).

NEWFOUNDLAND............1
PRINCE EDWARD ISLAND.....2
NOVA SCOTIA.............3
NEW BRUNSWICK...........4
QUEBEC..................5
ONTARIO.................6
MANITOBA.............7
SASKATCHEWAN..........8
ALBERTA...............9
BRITISH COLUMBIA.....10
N.W. TERRITORIES.....11
YUKON TERRITORY......12

5) The discharge of substances harmful to the environment is typically divided into three groupings: air pollution, water pollution and solid waste. Land management practices may also be a source of environmental problems. Which type of discharge or problems does your company have to deal with, OR may have to deal with in the future? Is it.......... (READ LIST, CIRCLE EITHER YES OR NO FOR EACH MENTION)

	NO	YES	
Air Pollution	1	2 ⟶	Go to Qu.6
Water Pollution	1	2 ⟶	Go to Qu.7
Solid Waste Pollution	1	2 ⟶	Go to Qu.8
Land Management Practices	1	2 ⟶	Go to Qu.9

AIR POLLUTION

6) Currently, which if any, of the following types of devices to control air pollution does your company have installed at any location in Canada?
(DO NOT READ LIST, CIRCLE AS MANY AS APPLY

	Qu.6a Currently Have	Qu.6b Next 3 yrs	Qu.6c Next 10 yrs
Absorption/Adsorption Systems	1	1	1
Air Handling Equipment	2	2	2
Catalytic Converters	3	3	3
Chemical Recovery Systems	4	4	4
Computer Hardware or Software Programs	5	5	5
Dust Collectors	6	6	6
Electrostatic Precipitators	7	7	7
Fabric Filters	8	8	8
Incinerators	9	9	9
Scrubbers-Dry	10	10	10
Scrubbers-Wet	11	11	11
OTHER (WRITE IN)	______	______	______
	______	______	______
NONE	99	99	99

6b) In just the next three years, that is until December 31,1993, which if any of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY

6c) And in just the next ten years, that is until December 31,1999, which if any of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

WATER POLLUTION

7a) Currently, which if any, of the following types of devices to control WATER POLLUTION does your company have installed at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

	Qu.7a Currently Have	Qu.7b Next 3 yrs	Qu.7c Next 10 yrs
Aeration Systems	1	1	1
Biological Treatment Systems	2	2	2
Centrifuges	3	3	3
Chemical Feeding and Mixing Equipment	4	4	4
Chemical Recovery Systems	5	5	5
Computer Hardware or Software Programs	6	6	6
Filters	7	7	7
Gravity Sedimentation Systems	8	8	8
Ion Exchange Systems	9	9	9
Oil/Water Separation Equipment	10	10	10
Potable Water Treatment Systems	11	11	11
Screens/Strainers	12	12	12
Sewage Treatment Systems & Equipment	13	13	13
Water Handling Products	14	14	14
Water Purification Systems & Equipment	15	15	15
OTHER (WRITE IN)	______ ______	______ ______	______ ______
NONE	99	99	99

7b) In just the next three years, that is until December 31,1993, which if any, of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

7c) And in just the next ten years, that is until December 31,1999, which if any of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY

SOLID WASTE POLLUTION

8a) Currently, which if any, of the following devices to control SOLID WASTE POLLUTION does your company have installed at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

	Qu.8a Currently Have	Qu.8b Next 3 yrs	Qu.8c Next 10 yrs
Computer Hardware or Software	1	1	1
Incineration	2	2	2
Recycling Systems & Equipment	3	3	3
Liquid Waste Collection Systems & Equipment(including Storage)	4	4	4
Solid Waste Collection Systems & Equipment (including Storage)	5	5	5
Waste Disposal Systems & Equipment (including storage)	6	6	6
Waste Handling Systems & Equipment	7	7	7
Water Separation Systems & Equipment	8	8	8
OTHER (WRITE IN)	____ ____	____ ____	____ ____
NONE	99	99	99

8b) In just the next three years that is until December 31,1993, which if any, of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS AS MANY AS APPLY)

8c) And, in just the next ten years,that is until December 31,1999 which if any of the following devices WILL your company be installing at any location in Canada? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY

LAND MANAGEMENT PRACTICES

9a) Currently, which if any, of the following LAND MANAGEMENT PRACTICES or products does your company use to protect the environment at any location in Canada?
(DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

	Qu.9a Currently Use	Qu.9b Next 3 yrs	Qu.9c Next 10 yrs
Computer Hardware or Software Programs	1	1	1
Agricultural Soil and Water Conservation Programs	2	2	2
Organic Agriculture	3	3	3
Reforestation	4	4	4
Fisheries Management	5	5	5
Forestry Conservation & Protection	6	6	6
Water Resource Planning	7	7	7
Rural Land Management	8	8	8
Flood Plain Control	9	9	9
Pest Control	10	10	10
OTHER (WRITE IN)	______	______	______
	______	______	______
NONE	99	99	99

9a) In just the next three years, that is until December 31,1993, which if any, of the following LAND MANAGEMENT PRACTICES WILL your company be implementing at any location in Canada?
(DO NOT READ LIST, CIRCLE AS MANY AS APPLY)

9b) December 31,1999, which if any of the following LAND MANAGEMENT PRACTICES WILL your company be implementing at any location in Canada?
(DO NOT READ LIST, CIRCLE AS MANY AS MANY AS APPLY)

10a In addition to the actual devices used for the control of emmissions, most treatment systems use various chemicals and measuring, monitoring instruments and control equipment. Currently, which if any of the following chemical processes or monitoring equipment does your company use at any location in Canada?
(DO NOT READ LIST. CIRCLE AS MANY AS APPLY

	Qu.10a Currently Have	Qu.10b Next 3 yrs	Qu.10c Next 10 yrs
CHEMICALS FOR POLLUTION CONTROL			
Absorbents/Adsorbents	1	1	1
Agglomeration/Pelletizing	2	2	2
Bacteria/Enzymes	3	3	3
Cleaning Agents	4	4	4
Corrosion/Scale Control	5	5	5
Dust Control	6	6	6
Water Treatment	7	7	7
MEASURING/MONITORING EQUIPMENT			
Air Quality Instruments	8	8	8
Ground water Instruments	9	9	9
Water Quality Instruments	10	10	10
Sampling Systems	11	11	11
Combustion Controls	12	12	12
Computer Controls	13	13	13
Process Controls	14	14	14
Sensors	15	15	15
Data Acquisition Equipment	16	16	16
Electrical Control Equipment	17	17	17
SCIENTIFIC RESEARCH AND LABS			
Analytical Instruments	18	18	18
Bacteriological Supplies	19	19	19
Calibration Equipment	20	20	20
Environment Chambers	21	21	21
Laboratory Chemicals	22	22	22
Lab Data Acquisition Systems	23	23	23
Laboratory Equipment	24	24	24
Lab Reagents and Supplies	25	25	25
OTHER (WRITE IN)	______	______	______
	______	______	______
NONE	99	99	99

10b) In just the next three years, that is until December 31,1993, which if any, of the following chemicals or measuring equipment WILL your company be using at any location in Canada?
(DO NOT READ LIST. CIRCLE AS MANY AS APPLY)

10c) And, in just the next ten years, that is until December 31,1999, which if any, of the following chemicals or measuring equipment WILL your company be using at any location in Canada?
DO NOT READ LIST. CIRCLE AS MANY AS APPLY

11a) Now we would like you to consider the costs associated with environmental control procedures at your company. I will be reading a number of items where your company may be incurring capital and operating costs directly related to environmental protection procedures. For each of the items please tell me how much your company spent in Fiscal 1989 at all locations in Canada? (WRITE IN EXACT AMOUNT. IF NOTHING WAS SPENT, WRITE IN, ZERO "O")

	Q.11a Fiscal 1989	Qu.11b Fiscal 1990	Qu.11c Fiscal 1992
CAPITAL EXPENDITURES			
Purchased Capital Equipment			
Leased Capital Equipment			
Physical Plant Modifications			
OPERATING EXPENDITURES			
Supplies - eg chemicals, filters, protective clothing (and replacement parts).			
Salaries/ Wages			
Training/ Retraining			
Storage/ Containers			
Storage/ Warehousing			
Shipping			
Equipment Maintenance & Servicing			
Land Management Expenditures			

11b) In Fiscal 1990 how much will your company be spending in capital cost for the following items at all locations in Canada? (WRITE IN EXACT AMOUNT, DO NOT ASK ITEMS MENTIONED IN OPERATING EXPENDITURES. IF NOTHING, WRITE IN, ZERO "O"

11c) And, what do you expect your company to incur in Fiscal 1992 for both capital and operating costs for the following items at all locations in Canada? (WRITE IN EXACT AMOUNT, IF NOTHING WRITE IN ZERO, "O"

12a) To the best of your knowledge, what percentage of your TOTAL FISCAL 1989 budget was accounted for by OPERATING and CAPITAL costs associated with environmental protection? (WRITE IN PERCENTAGE)

FISCAL 1989 OPERATING COSTS |_|_|_| %

FISCAL 1989 CAPITAL COSTS |_|_|_| %

12b) In FISCAL 1992, what percentage of your TOTAL budget do you estimate will be accounted for by OPERATING AND CAPITAL costs associated with environmental protection? (WRITE IN PERCENTAGE)

FISCAL 1992 OPERATING COSTS |_|_|_| %

FISCAL 1992 CAPITAL COSTS |_|_|_| %

13) In FISCAL 1989, how much did your company spend at all locations in Canada to adhere to current environmental protection regulations? This would include both capital expenditures and operating costs. (WRITE IN EXACT AMOUNT - IF NOTHING SPENT,ENTER ZERO,"0")

$ |_|_|_|, |_|_|_|, |_|_|_|

IF NOTHING SPENT IN QU.13 SKIP TO QU.17a

14a) The cost to implement environmental control procedures can often be massive. Over just the past five years, which if any of the following methods has your company used to finance environmental equipment acquisitions and operating costs? (DO NOT READ LIST, CIRCLE AS MANY AS APPLY).

	Qu.14a Past 5 Years	Qu.14b Future
Short Term Bank Debt	1	1
Long Term Bank Debt	2	2
Commercial Paper	3	3
Long Term Bonds	4	4
Equity	5	5
Asset Sales	6	6
Profit Re-Investment/Cash Flow	7	7
Government Funds or Grants from Any Level	8	8
OTHER (WRITE IN)	________	________
	________	________

14b) And in the future, which if any of the following methods do you expect your company will have to use to finance environmental equipment acquisition and operating costs? (DO NOT READ LIST,CIRCLE AS MANY AS APPLY).

15a) Has your company had to increase product costs to help recover the cost of environmental control procedures? (CIRCLE EITHER YES OR NO)

YES..................1 ⟶ Ask Qu.15 b/c

NO...................2 ⟶ Go to Qu.16c

15b) By what percentage has your product cost risen to cover environmental control procedures? (WRITE IN PERCENTAGE)

|_|_|_| %

15c) And, in the future, what percentage of the rise in your product cost will be directly attributable to environmental control procedures?

|_|_|_| %

16a) Has your company had to accept a low profit margin to help recover the cost of environmental control procedures? (CIRCLE EITHER YES OR NO)

YES..................1 ⟶ Ask Qu.16 b/c

NO...................2 ⟶ Go to Qu.16c

16b) By what percentage has your profit margin fallen to cover environmental control procedures? (WRITE IN PERCENTAGE)

|_|_|_| %

16c) And, in the future what percentage decline in your profit margin will be directly attributable to environmental control procedures? (WRITE IN PERCENTAGE)

|_|_|_| %

17a) Do you believe that current environmental standards have had a positive, negative or neutral effect on your company's CANADIAN competitive position? (DO NOT READ, CIRCLE ONE ONLY)

Positive Effect...........1

Negative Effect...........2

Neutral Effect............3

17b) As Canadian society demands more environmental regulation and legislation, overall will this have a positive, negative, or neutral effect on your company's competitive position? (DO NOT READ CIRCLE ONE ONLY)

Positive Effect...........1

Negative Effect...........2

Neutral Effect............3

18a) In just the past two years, which if any environmental activities (such as hiring the services of an environmental consultant having formed or joined an industrial lobby group involved with environmental issues) has your company taken or been involved in?
(DO NOT READ, CIRCLE AS MANY AS APPLY)

	Qu.18a Past 2 yrs	Qu.18b Next 2 yrs
Hired the services of an environment consultant	1	1
Appointed a company official responsible for environment affairs	2	2
Consulted/met with environmental regulatory officials	3	3
Consulted/met with environmental pressure groups/lobbies	4	4
Formed/joined an industry lobby group on environmental issues.	5	5
Been subjected to an environmental Assessment Report/Study	6	6
OTHER (WRITE IN)	______ ______	______ ______

18b) In and in just the next two years, what environmental actions will your company take or be involved in?
(DO NOT READ, CIRCLE AS MANY AS APPLY)

19) In your opinion, who should be MOST responsible for implementing and/or regulating environmental control standards? (DO NOT READ, CIRCLE AS MANY AS APPLY)

BUSINESS/INDUSTRY............1
MUNICIPAL GOVERNMENT..........2
PROVINCIAL GOVERNMENT.........3
FEDERAL GOVERNMENT............4

20) Finally, environmental protection has become one of the most pressing issues facing Canadian society. In your opinion, what are the key issues and problems faced by Canadian business with regards to environmental protection?...what else?.....anything else?

____
____
____
____
____
____

Thank you for your time and co-operation!!!

PROTECTION DE L'ENVIRONNEMENT
ETUDE # 4797/90

DUN & BRADSTREET CANADA
5770 Hurontario Street
Mississauga, Ontario
L5R 3G5
(416) 568-6162
DOE/CAP-260-03908

1) Il nous faut, tout d'abord, quelques renseignements d'ordre général sur votre entreprise. Combien de sites commerciaux votre entreprise a-t-elle au Canada? Veuillez inclure tous les bureaux, toutes les usines, tous les entrepôts et tous les centres de distribution établis à des adresses différentes. (COCHEZ UNE SEULE CASE)

Un .... ☐ 1
Deux .... ☐ 2
Trois .... ☐ 3
Quatre .... ☐ 4
Cinq .... ☐ 5
Six .... ☐ 6
Sept .... ☐ 7
Huit .... ☐ 8
Neuf .... ☐ 9
Dix .... ☐ 10
Onze ou plus
(INSCRIVEZ LE NOMBRE) ______

2) Dans combien de vos sites canadiens utilise-t-on ou produit-on des matériaux qui peuvent être nuisibles à l'environnement? Ceci comprend toute consommation de matière première, procédé de fabrication ou sous-produit industriel et produit final qui utilise ou produit des substances qui pourraient causer la pollution de l'air, des eaux ou des déchets solides.

Un .... ☐ 1
Deux .... ☐ 2
Trois .... ☐ 3
Quatre .... ☐ 4
Cinq .... ☐ 5
Six .... ☐ 6
Sept .... ☐ 7
Huit .... ☐ 8
Neuf .... ☐ 9
Dix .... ☐ 10
Onze ou plus
(INSCRIVEZ LE NOMBRE) ______

S'IL N'Y A QU'UN SITE, VEUILLEZ PASSER À LA QUESTION 6; TOUS LES AUTRES, VEUILLEZ CONTINUER À LA QUESTION 3.

3a) Vous trouverez ci-dessous la liste des provinces et territoires du Canada. Veuillez indiquer pour chaque province ou territoire le nombre de sites où votre entreprise utilise ou produit des matériaux nuisibles à l'environnement. (VEUILLEZ INSCRIRE LE NOMBRE À LA LIGNE DE CHAQUE PROVINCE OU TERRITOIRE)

Terre-Neuve .... ____ ☐
Île-du-Prince-Édouard ____ ☐
Nouvelle-Écosse ...... ____ ☐
Nouveau-Brunswick .... ____ ☐
Québec .... ____ ☐
Ontario .... ____ ☐
Manitoba .... ____ ☐
Saskatchewan .... ____ ☐
Alberta .... ____ ☐
Colombie-Britannique ____ ☐
Territoires du N.-O. ____ ☐
Yukon .... ____ ☐

3b) Veuillez indiquer les provinces ou territoires où votre entreprise pourrait, à l'avenir, établir de nouvelles installations qui utiliseront ou produiront des matériaux nuisibles à l'environnement. (COCHEZ TOUTES LES CASES PERTINENTES)

4) Bien que le besoin de procédures et de dispositifs pour la prévention de la pollution puisse être identifié au niveau local, dans votre entreprise, où se prend la décision finale en ce qui concerne les questions de prévention de la pollution et les dépenses que cela entraîne?

Décision finale prise
au niveau local .... ☐ 1 PASSEZ À LA QU. 5a

Décision finale prise
au siège social canadien ...... ☐ 2 PASSEZ À LA QU. 5a

Décision finale prise
au siège social international . ☐ 3 PASSEZ À LA QU. 5b

5a) Et êtes-vous situé(e) au siège social canadien ou dans l'un des sites locaux? (COCHEZ UNE SEULE CASE)

Siège social ..... ☐ 1 ⎤
Site local .... ☐ 2 ⎦ PASSEZ À LA QU. 6

5b) Dans quelle ville et dans quel pays se trouve votre siège social international? (VEUILLEZ INSCRIRE)

Ville: ______________________________

Pays: ______________________________

6) L'émission de substances nuisibles à l'environnement se divise en trois groupements qui sont notamment: la pollution de l'air, la pollution des eaux, et la pollution des déchets solides. Les pratiques de gestion des terres peuvent aussi être une source de problèmes pour l'environnement. Veuillez indiquer le type ou les types d'émission qui concerne(nt) actuellement votre entreprise, OU qui pourrai(en)t la concerner à l'avenir. (COCHEZ TOUTES LES CASES PERTINENTES)

Pollution de l'air .... ☐ RÉPONDEZ À LA QU. 7
Pollution des eaux .... ☐ RÉPONDEZ À LA QU. 8
Pollution des déchets solides . ☐ RÉPONDEZ À LA QU. 9
Pratiques de gestion des terres ☐ RÉPONDEZ À LA QU. 10

7a) Parmi les types de dispositifs pour la prévention de la POLLUTION DE L'AIR qui figurent sur la liste ci-dessous, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 7a A actuellement	QU. 7b D'ici 3 ans	QU. 7c D'ici 10 ans
Systèmes d'absorption/d'adsorption	☐ 1	☐ 1	☐ 1
Matériel d'aménagement de l'air	☐ 2	☐ 2	☐ 2
Convertisseurs catalytiques	☐ 3	☐ 3	☐ 3
Systèmes de récupération chimique	☐ 4	☐ 4	☐ 4
Matériel informatique ou progiciels d'ordinateur	☐ 5	☐ 5	☐ 5
Collecteurs de poussière	☐ 6	☐ 6	☐ 6
Précipitateurs électrostatiques	☐ 7	☐ 7	☐ 7
Filtres en toile	☐ 8	☐ 8	☐ 8
Incinérateurs	☐ 9	☐ 9	☐ 9
Séparateurs/épurateurs secs	☐ 10	☐ 10	☐ 10
Séparateurs/épurateurs à voie humide	☐ 11	☐ 11	☐ 11
AUTRE (INSCRIVEZ)	____________	____________	____________
	____________	____________	____________
AUCUN	☐ 99	☐ 99	☐ 99

7b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs de la liste votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

7c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs de la liste estimez-vous que votre entreprise installera, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

8a) Parmi les types de dispositifs pour la prévention de la POLLUTION DES EAUX qui figurent sur la liste ci-dessous, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 8a À actuellement	QU. 8b D'ici 3 ans	QU. 8c D'ici 10 ans
Systèmes d'aération	[] 1	[] 1	[] 1
Systèmes de traitement biologique.	[] 2	[] 2	[] 2
Centrifugeuses	[] 3	[] 3	[] 3
Doseur et mélangeur chimique	[] 4	[] 4	[] 4
Systèmes de récupération chimique.	[] 5	[] 5	[] 5
Matériel informatique ou progiciels d'ordinateur	[] 6	[] 6	[] 6
Filtres	[] 7	[] 7	[] 7
Systèmes de sédimentation par gravité	[] 8	[] 8	[] 8
Systèmes d'échanges d'ions	[] 9	[] 9	[] 9
Matériel de séparation eau-huile .	[] 10	[] 10	[] 10
Systèmes de traitement d'eau potable	[] 11	[] 11	[] 11
Tamis/cribles	[] 12	[] 12	[] 12
Réseau et installation de traitement/d'assainissement/d'épuration des eaux usées/d'égout	[] 13	[] 13	[] 13
Produits d'aménagement des eaux ..	[] 14	[] 14	[] 14
Systèmes et installations de traitement/d'épuration des eaux	[] 15	[] 15	[] 15
AUTRE (INSCRIVEZ)	____	____	____
	____	____	____
AUCUN	[] 99	[] 99	[] 99

8b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs de la liste votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

8c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs de la liste estimez-vous que votre entreprise installera, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

9a) Parmi les types de dispositifs pour la prévention de la POLLUTION DES DECHETS SOLIDES qui figurent sur la liste ci-dessous, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 9a À actuellement	QU. 9b D'ici 3 ans	QU. 9c D'ici 10 ans
Matériel informatique ou progiciels d'ordinateur	☐ 1	☐ 1	☐ 1
Incinération	☐ 2	☐ 2	☐ 2
Systèmes et installations de recyclage	☐ 3	☐ 3	☐ 3
Systèmes et installations de collection de déchets liquides (y compris stockage/réservoirs).	☐ 4	☐ 4	☐ 4
Systèmes et installations de collection de déchets/résidus solides (y compris stockage) ...	☐ 5	☐ 5	☐ 5
Systèmes et installations d'evacuation/d'élimination de déchets (y compris stockage) ...	☐ 6	☐ 6	☐ 6
Systèmes et installations de manutention des déchets	☐ 7	☐ 7	☐ 7
Systèmes et installations de séparation des déchets	☐ 8	☐ 8	☐ 8
AUTRE (INSCRIVEZ)	______	______	______
	______	______	______
AUCUN	☐ 99	☐ 99	☐ 99

9b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs de la liste votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

9c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs de la liste estimez-vous que votre entreprise installera, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

10a) Parmi les types de PRATIQUES DE GESTION DES TERRES ou de PRODUITS POUR LA GESTION DES TERRES qui figurent sur la liste ci-dessous, quels sont ceux, s'il y a lieu, que votre entreprise utilise pour protéger l'environnement à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 10a Utilise actuellement	QU. 10b D'ici 3 ans	QU. 10c D'ici 10 ans
Matériel informatique ou progiciels d'ordinateur	☐ 1	☐ 1	☐ 1
Conservation des terrains agricoles et des eaux	☐ 2	☐ 2	☐ 2
Agriculture organique	☐ 3	☐ 3	☐ 3
Reboisement	☐ 4	☐ 4	☐ 4
Gestion de la pêche/pêcherie	☐ 5	☐ 5	☐ 5
Conservation et protection forestières	☐ 6	☐ 6	☐ 6
Planification des ressources hydrauliques (en eau)	☐ 7	☐ 7	☐ 7
Gestion des terres rurales	☐ 8	☐ 8	☐ 8
Aménagement des zones inondables .	☐ 9	☐ 9	☐ 9
Lutte contre les parasites	☐ 10	☐ 10	☐ 10
AUTRE (INSCRIVEZ)	________	________	________
	________	________	________
AUCUN	☐ 99	☐ 99	☐ 99

10b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquelles des pratiques de gestion des terres de la liste votre entreprise VA-T-ELLE amener à exécution, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

10c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquelles des pratiques de gestion des terres de la liste estimez-vous que votre entreprise amènera à exécution, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (COCHEZ TOUTES LES CASES PERTINENTES)

11a) En plus des dispositifs utilisés pour le contrôle des émissions, la plupart des systèmes de traitement utilisent divers produits chimiques, instruments de mesure et de surveillance ainsi que du matériel régulateur. Parmi les types de procedés chimiques ou d'installations de surveillance de la liste suivante, quels sont ceux, s'il y a lieu, que votre entreprise utilise à l'un ou à plusieurs de ses sites canadiens?
(COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 11a Utilise actuellement	QU. 11b D'ici 3 ans	QU. 11c D'ici 10 ans
Produits chimiques pour la prévention de la pollution			
Agents d'absorption/d'adsorption	[] 1	[] 1	[] 1
Granulation/formation de nodules	[] 2	[] 2	[] 2
Bactéries/enzymes	[] 3	[] 3	[] 3
Agents d'épuration	[] 4	[] 4	[] 4
Protection anti-corrosion/ anti-incrustation	[] 5	[] 5	[] 5
Contrôle des poussières	[] 6	[] 6	[] 6
Traitement de l'eau	[] 7	[] 7	[] 7
Matériel pour installation de mesure de surveillance			
Instruments de surveillance/de mesure de la qualité de l'air	[] 8	[] 8	[] 8
Instruments de surveillance/de mesure de la nappe d'eau souterraine	[] 9	[] 9	[] 9
Instruments d'aménagement de la qualité des eaux	[] 10	[] 10	[] 10
Systèmes de prélèvement d'échantillons	[] 11	[] 11	[] 11
Contrôles de la combustion	[] 12	[] 12	[] 12
Contrôles par ordinateur	[] 13	[] 13	[] 13
Contrôles des processus	[] 14	[] 14	[] 14
Détecteurs	[] 15	[] 15	[] 15
Système d'acquisition de données	[] 16	[] 16	[] 16
Installation de réglage/contrôle électrique	[] 17	[] 17	[] 17
Recherche et laboratoires scientifiques			
Instruments d'analyse	[] 18	[] 18	[] 18
Matériel bactériologique	[] 19	[] 19	[] 19
Matériel d'étalonnage	[] 20	[] 20	[] 20
Chambres à environnement contrôlé ...	[] 21	[] 21	[] 21
Produits chimiques de laboratoire ...	[] 22	[] 22	[] 22
Systèmes de saisie de données de laboratoire	[] 23	[] 23	[] 23
Installations de laboratoire	[] 24	[] 24	[] 24
Réactifs & fournitures de laboratoire	[] 25	[] 25	[] 25
AUTRE (INSCRIVEZ)	____________ ____________	____________ ____________	____________ ____________
AUCUN	[] 99	[] 99	[] 99

11b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des produits chimiques ou instruments de mesure de la liste votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens?
(COCHEZ TOUTES LES CASES PERTINENTES)

11c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des produits chimiques ou instruments de mesure de la liste estimez-vous que votre entreprise installera, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens?
(COCHEZ TOUTES LES CASES PERTINENTES)

12a) Nous voudrions maintenant que vous examiniez les frais associés aux procédures de contrôle de l'environnement dans votre entreprise. Vous trouverez ci-dessous un certain nombre de domaines dans lesquels votre entreprise pourrait encourir des dépenses en capital et des frais d'exploitation directement raliés aux procédures de protection de l'environnement. Pour chacun des articles ci-dessous, veuillez indiquer combien votre entreprise a dépensé au cours de l'EXERCICE 1989 dans tous ses sites canadiens. (INSCRIVEZ LE MONTANT EXACT - SI RIEN N'A ETE DEPENSE, VEUILLEZ INSCRIRE ZERO "0")

	QU. 12a EXERCICE 1989	QU. 12b EXERCICE 1990	QU. 12c EXERCICE 1992
DEPENSES EN CAPITAL			
Achat de biens d'équipement	$	$	$
Location de biens d'équipement	$	$	$
Frais de réaménagement de l'usine	$	$	$
DEPENSES D'EXPLOITATION			
Fournitures - ex. produits chimiques, filtres, vêtements de protection et pièces de rechange	$	$	$
Salaires/ Charges sociales	$	$	$
Formation/ Recyclage	$	$	$
Stockage - Conteneurs	$	$	$
Stockage - Entrepôts	$	$	$
Décharge/ destruction des déchets	$	$	$
Acheminement	$	$	$
Entretien, révision des installations	$	$	$
Frais de gestion des terres	$	$	$

12b) Au cours de l'EXERCICE 1990, combien votre entreprise dépensera-t-elle pour chacun des articles ci-dessus dans tous ses sites canadiens? (INSCRIVEZ LE MONTANT EXACT - SI RIEN, VEUILLEZ INSCRIRE ZERO "0")

12c) Quelle est votre estimation de ce que votre entreprise dépensera au cours de l'EXERCICE 1992 pour chacun des articles ci-dessus dans tous ses sites canadiens? (INSCRIVEZ LE MONTANT EXACT - SI RIEN, VEUILLEZ INSCRIRE ZERO "0")

13a) À votre connaissance, quel pourcentage de votre budget TOTAL pour l'EXERCICE 1990 sera comptabilisé pour les FRAIS D'EXPLOITATION ET LES DEPENSES EN CAPITAL reliés à la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE)

EXERCICE 1990 - FRAIS D'EXPLOITATION |_|_|_| %

EXERCICE 1990 - DEPENSES EN CAPITAL |_|_|_| %

13b) Pour l'EXERCICE 1992, quelle est votre estimation du pourcentage de votre budget TOTAL qui sera comptabilise pour les FRAIS D'EXPLOITATION ET LES DEPENSES EN CAPITAL reliés à la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE)

EXERCICE 1992 - FRAIS D'EXPLOITATION |_|_|_| %

EXERCICE 1992 - DEPENSES EN CAPITAL |_|_|_| %

13c) Pour l'EXERCICE 1999, quelle est votre estimation du pourcentage de votre budget TOTAL qui sera comptabilisé pour les FRAIS D'EXPLOITATION ET LES DEPENSES EN CAPITAL reliés à la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE)

EXERCICE 1999 - FRAIS D'EXPLOITATION |_|_|_| %

EXERCICE 1999 - DEPENSES EN CAPITAL |_|_|_| %

14a) Pour l'EXERCICE 1989, combien votre entreprise a-t-elle dépensé dans tous ses sites canadiens afin d'obéir aux règlements actuels pour la protection de l'environnement? Veuillez compter aussi bien les dépenses en capital que les frais d'exploitation. (INSCRIVEZ LE MONTANT EXACT - SI RIEN N'A ETE DEPENSE, VEUILLEZ INSCRIRE ZERO "0")

|_|_|_| |_|_|_| |_|_|_|$

14b) D'après vous, quel pourcentage approximatif de ce montant a été dépensé pour satisfaire aux règlements établis aux niveaux fédéral, provincial et municipal pour la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE - SI RIEN N'A ETE DEPENSE, VEUILLEZ INSCRIRE ZERO "0")

Fédéral |_|_|_| %

Provincial |_|_|_| %

Municipal |_|_|_| %

15) Au cours de l'EXERCICE 1989, combien votre entreprise a-t-elle dépensé pour la protection de l'environnement EN PLUS de ce qu'exigent les normes actuellement en vigueur? (INSCRIVEZ LE MONTANT EXACT - SI RIEN N'A ETE DEPENSE, VEUILLEZ INSCRIRE ZERO "0")

|_|_|_| |_|_|_| |_|_|_|$

16a) L'exécution des procédures de contrôle de l'environnement peut souvent coûter un prix énorme. Au cours des cinq dernières années seulement, lesquelles des méthodes suivantes votre entreprise a-t-elle utilisées, s'il y a lieu, pour financer, non seulement l'acquisition d'installations ou d'équipement de protection de l'environnement, mais aussi les frais de fonctionnement? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 16a 5 dernières années	QU.16b 10 prochaines années
Emprunt bancaire à court terme ..	[] 1	[] 1
Emprunt bancaire à long terme ...	[] 2	[] 2
Effet financier	[] 3	[] 3
Obligations à long terme	[] 4	[] 4
Capitaux propres	[] 5	[] 5
Ventes de biens	[] 6	[] 6
Bénéfices réinvestis/fonds autogénérés	[] 7	[] 7
Fonds ou subventions du gouvernement à tous les niveaux	[] 8	[] 8
AUTRE (INSCRIVEZ)	________	________
	________	________

16b) Et au cours des dix prochaines années seulement, lesquelles des méthodes de la liste estimez-vous que votre entreprise devra utiliser, s'il y a lieu, pour financer l'acquisition d'installations ou d'équipement de protection de l'environnement, et les frais d'exploitation? (COCHEZ TOUTES LES CASES PERTINENTES)

17a) Votre entreprise a-t-elle dû augmenter les frais incorporables pour aider à recouvrer le coût des procédures de contrôle de l'environnement? (COCHEZ UNE SEULE CASE)

Oui .... [] 1 REPONDEZ À LA QU. 17b/c

Non .... [] 2 PASSEZ À LA QU. 17c

17b) Par quel pourcentage vos frais incorporables ont-ils été augmentés pour couvrir les procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

|_|_|_| %

17c) Et au cours des cinq prochaines années, quel pourcentage de l'augmentation de vos frais incorporables sera directement attribuable aux procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

|_|_|_| %

18a) Votre entreprise a-t-elle dû accepter une marge de profits moins élevée pour aider à recouvrer le coût des procédures de contrôle de l'environnement? (COCHEZ UNE SEULE CASE)

Oui .... [] 1 → REPONDEZ À LA QU.18b/c
Non .... [] 2 → PASSEZ À LA QU. 18c

18b) Par quel pourcentage votre marge de profits a-t-elle été baissée pour couvrir le coût des procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

|_|_|_| %

18c) Et au cours des cinq prochaines années seulement, quel pourcentage de la baisse de votre marge de profits sera directement attribuable aux procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

|_|_|_| %

19a) Pensez-vous que les normes de qualité de l'environnement actuelles ont eu un effet positif, négatif ou neutre sur la position concurrentielle CANADIENNE de votre entreprise? (COCHEZ UNE SEULE CASE)

Effet positif .... [] 1
Effet négatif .... [] 2
Effet neutre .... [] 3

19b) Et pensez-vous que les normes de qualité de l'environnement actuelles ont eu un effet positif, négatif ou neutre sur la position concurrentielle INTERNATIONALE de votre entreprise? (COCHEZ UNE SEULE CASE)

Effet positif .... [] 1
Effet négatif .... [] 2
Effet neutre .... [] 3
N'exporte pas .... [] 4

19c) Comme la société canadienne exige davantage de règlements et de lois pour la protection de l'environnement, est-ce que, d'une manière générale, cela aura un effet positif, négatif ou neutre sur la position concurrentielle de votre entreprise? (COCHEZ UNE SEULE CASE)

Effet positif .... [] 1
Effet négatif .... [] 2
Effet neutre .... [] 3

20a) Au cours des deux dernières années seulement, lesquelles des mesures suivantes votre compagnie a-t-elle prises, ou auxquelles de ces mesures ~~a-t-~~elle pris part, s'il y a lieu? (COCHEZ TOUTES LES CASES PERTINENTES)

	QU. 20a Depuis 2 ans	QU. 20b D'ici 2 ans
Engagé les services d'un expert-conseil en matière d'environnement	☐ 1	☐ 1
Nommé un des dirigeants de la compagnie responsable des questions d'environnement	☐ 2	☐ 2
Consulté/rencontré des officiels chargés des règlements concernant l'environnement	☐ 3	☐ 3
Consulté/rencontré des lobbies/groupes de pression pour l'environnement	☐ 4	☐ 4
Formé/rejoint un lobby/groupe de pression dans votre industrie pour les questions d'environnement	☐ 5	☐ 5
Fait l'objet d'un rapport/d'une étude d'évaluation de pollution de l'environnement	☐ 6	☐ 6
Aucune de ces mesures	☐ 7	☐ 7

20b) D'ici deux ans seulement, lesquelles des mesures de la liste votre compagnie prendra-t-elle, s'il y a lieu, ou auxquelles de ces mesures prendra-t-elle part? (COCHEZ TOUTES LES CASES PERTINENTES)

21) À votre avis, qui devrait être LE PLUS responsable d'exécuter et/ou de fixer les normes pour le contrôle de l'environnement? (LISEZ LA LISTE - COCHEZ TOUTES LES CASES PERTINENTES)

Commerce/industrie	☐ 1
Gouvernement municipal	☐ 2
Gouvernement provincial	☐ 3
Gouvernement fédéral	☐ 4

22) Finalement, la protection de l'environnement est devenue l'une des questions les plus pressantes auxquelles la société canadienne doit faire face. Quelles sont, à votre avis, les questions et les difficultés cruciales auxquelles le monde canadien des affaires doit faire face en ce qui concerne la protection de l'environnement? (VEUILLEZ DONNER UNE REPONSE AUSSI PRECISE QUE POSSIBLE)

MERCI BEAUCOUP DE NOUS AVOIR ACCORDE VOTRE TEMPS ET VOS EFFORTS. VEUILLEZ, DÈS AUJOURD'HUI, RENVOYER LE QUESTIONNAIRE DANS L'ENVELOPPE-REPONSE AFFRANCHIE.

ETUDE SUR L'ENVIRONNEMENT
ETUDE # 4797/90

DUN & BRADSTREET CANADA
5770 Hurontario Street
Mississauga, Ontario
L5R 3G5
(416) 568-6162

Bonjour (Bonsoir). Je m'appelle ______________ et je vous téléphone de la part de Dun & Bradstreet. Puis-je parler à (PERSONNE DU DMI OU LE PRESIDENT DIRECTEUR DES FINANCES). SI CETTE PERSONNE N'EST PAS DISPONIBLE, FIXEZ UN RENDEZ-VOUS DE RAPPEL.

Comme vous le savez, les questions et les préoccupations concernant l'environnement sont de plus en plus répandues et pressantes dans notre société. Ces questions et ces préoccupations ont affecté aussi bien le public en général que les industries. Dun & Bradstreet mène une enquête de grande envergure concernant les dépenses encourues ou à encourir par les entreprises canadiennes pour la protection de l'environnement. Nous avons sélectionné votre entreprise au hasard, dans notre base de données, comme représentante des entreprises de votre industrie. Votre participation est par conséquent d'une importance capitale pour le succès de ces travaux de recherche. Tous les renseignements que vous nous fournirez seront traités de la façon la plus strictement confidentielle.

1) Combien de sites commerciaux votre entreprise a-t-elle au Canada? Veuillez inclure toutes vos succursales, tous vos bureaux, toutes vos usines, tous vos entrepôts et tous vos centres de distribution.
(NE LISEZ PAS, ENCERCLEZ UN SEUL CODE)

UN.......... 1
DEUX........ 2
TROIS....... 3
QUATRE...... 4
CINQ........ 5
SIX........... 6
SEPT.......... 7
HUIT.......... 8
NEUF.......... 9
DIX.......... 10
ONZE OU PLUS ______________
(INSCRIVEZ LE NOMBRE)

2) Dans combien de vos sites canadiens utilise-t-on ou produit-on des matériaux qui peuvent être nuisibles à l'environnement? Ceci comprend toute consommation de matière première, procédé de fabrication ou sous-produit industriel et produit final qui utilise ou produit des substances qui pourraient causer la pollution de l'air, des eaux ou par les déchets solides.
(NE LISEZ PAS, ENCERCLEZ UN SEUL CODE)

UN.......... 1
DEUX........ 2
TROIS....... 3
QUATRE...... 4
CINQ........ 5
SIX........... 6
SEPT.......... 7
HUIT.......... 8
NEUF.......... 9
DIX.......... 10
ONZE OU PLUS ______________
(INSCRIVEZ LE NOMBRE)

(S'IL N'Y A QU'UN SITE, PASSEZ À LA QU.5; TOUS LES AUTRES, CONTINUEZ À LA QU.3)

3a) Dans quelles provinces ou dans quels territoires votre entreprise utilise-t-elle ou produit-elle des matériaux qui peuvent être nuisibles à l'environnement?
(NE LISEZ PAS. ENCERCLEZ TOUS LES CODES PERTINENTS)

TERRE-NEUVE..................	1	!_!_!_!
ÎLE-DU-PRINCE-EDOUARD.........	2	!_!_!_!
NOUVELLE-ECOSSE...............	3	!_!_!_!
NOUVEAU-BRUNSWICK.............	4	!_!_!_!
QUEBEC........................	5	!_!_!_!
ONTARIO.......................	6	!_!_!_!
MANITOBA......................	7	!_!_!_!
SASKATCHEWAN..................	8	!_!_!_!
ALBERTA.......................	9	!_!_!_!
COLOMBIE-BRITANNIQUE..........	10	!_!_!_!
TERRITOIRES DU N.-O...........	11	!_!_!_!
TERRITOIRE DU YUKON...........	12	!_!_!_!

3b) Et dans combien de vos sites de/du/des (PROV/TERR) utilise-t-on ou produit-on des matériaux qui peuvent être nuisibles à l'environnement?

4) À l'avenir, dans quelles provinces ou dans quels territoires ajouterez-vous de nouveaux sites ou de nouvelles installations où l'on utilisera ou produira des matériaux qui peuvent être nuisibles à l'environnement?
(NE LISEZ PAS: ENCERCLEZ TOUS LES CODES PERTINENTS)

TERRE-NEUVE................	1	MANITOBA...............	7
ÎLE-DU-PRINCE-EDOUARD......	2	SASKATCHEWAN...........	8
NOUVELLE-ECOSSE............	3	ALBERTA................	9
NOUVEAU-BRUNSWICK..........	4	COLOMBIE-BRITANNIQUE...	10
QUEBEC.....................	5	TERRITOIRES DU N.-O....	11
ONTARIO....................	6	TERRITOIRE DU YUKON....	12

5) La décharge de substances nuisibles à l'environnement se divise en trois groupes qui sont notamment: la pollution de l'air, la pollution des eaux, et les déchets solides. Les pratiques de gestion des terres peuvent aussi être une source de problèmes pour l'environnement. À quel type de décharge ou de problèmes votre entreprise doit-elle faire face à l'heure actuelle, OU pourrait-elle faire face à l'avenir? S'agit-il de... (LISEZ LA LISTE: ENCERCLEZ SOIT OUI, SOIT NON À CHAQUE MENTION)

	NON	OUI	
Pollution de l'air	1	2 →	Passez à 6
Pollution des eaux	1	2 →	Passez à 7
Pollution par déchets solides	1	2 →	Passez à 8
Pratiques de gestion des terres	1	2 →	Passez à 9

POLLUTION DE L'AIR

6a) À l'heure actuelle, parmi les types suivants de dispositifs pour la prévention de la POLLUTION DE L'AIR, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUS LES CODES PERTINENTS)

	QU. 6a À actuellement	QU. 6b D'ici 3 ans	QU. 6c D'ici 10 ans
Systèmes d'absorption/d'adsorption	1	1	1
Matériel d'aménagement de l'air	2	2	2
Convertisseurs catalytiques	3	3	3
Systèmes de récupération chimique	4	4	4
Matériel informatique ou progiciels d'ordinateur	5	5	5
Collecteurs de poussière	6	6	6
Précipitateurs électrostatiques	7	7	7
Filtres en toile	8	8	8
Incinérateurs	9	9	9
Séparateurs/épurateurs secs	10	10	10
Séparateurs/épurateurs à voie humide	11	11	11
AUTRE (INSCRIVEZ)	______	______	______
	______	______	______
AUCUN	99	99	99

6b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

6c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

POLLUTION DES EAUX

7a) À l'heure actuelle, parmi les types suivants de dispositifs pour la prevention de la POLLUTION DES EAUX, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE, ENCERCLEZ TOUS LES CODES PERTINENTS)

	QU. 7a À actuel-lement	QU. 7b D'ici 3 ans	QU. 7c D'ici 10 ans
Systèmes d'aération	1	1	1
Systèmes de traitement biologique	2	2	2
Centrifugeuses	3	3	3
Doseur et mélangeur chimique	4	4	4
Systèmes de récupération chimique	5	5	5
Matériel informatique ou progiciels d'ordinateur	6	6	6
Filtres	7	7	7
Systèmes de sédimentation par gravité	8	8	8
Systèmes d'échanges d'ions	9	9	9
Matériel de séparation eau/huile	10	10	10
Systèmes de traitement d'eau potable	11	11	11
Tamis/cribles	12	12	12
Réseau et installation de traitement/d'assainissement/d'épuration des eaux usées/d'égout	13	13	13
Produits d'aménagement des eaux	14	14	14
Systèmes et installations de traitement/d'épuration des eaux	15	15	15
AUTRE (INSCRIVEZ)	________	________	________
	________	________	________
AUCUN	99	99	99

7b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE, ENCERCLEZ TOUTES LES CASES PERTINENTES)

7c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE, ENCERCLEZ TOUTES LES CASES PERTINENTES)

POLLUTION PAR DECHETS SOLIDES

8a) À l'heure actuelle, parmi les types suivants de dispositifs ~~pour~~ la prevention de la POLLUTION PAR DECHETS SOLIDES, quels sont ceux, s'il y a lieu, que votre entreprise a installés à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUS LES CODES PERTINENTS).

	QU. 8a À actuellement	QU. 8b D'ici 3 ans	QU. 8c D'ici 10 ans
Matériel informatique ou progiciels d'ordinateur	1	1	1
Incinération	2	2	2
Systèmes & installations de recyclage	3	3	3
Systèmes & installations de collection de déchets liquides (y compris stockage/réservoirs)	4	4	4
Systèmes & installations de collection de déchets/résidus solides (y compris stockage)	5	5	5
Systèmes & installations d'évacuation/d'élimination de déchets (y compris stockage)	6	6	6
Systèmes & installations de manutention des déchets	7	7	7
Systèmes & installations de séparation des eaux	8	8	8
AUTRE (INSCRIVEZ)	______	______	______
	______	______	______
AUCUN	99	99	99

8b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE, ENCERCLEZ TOUTES LES CASES PERTINENTES)

8c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des dispositifs suivants votre entreprise VA-T-ELLE installer, s'il y a lieu, à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

PRATIQUES DE GESTION DES TERRES

9a) Parmi les types de PRATIQUES DE GESTION DES TERRES ou de PRODUITS POUR LA GESTION DES TERRES suivants, quels sont ceux, s'il y a lieu, que votre entreprise utilise pour protéger l'environnement à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUS LES CODES PERTINENTS)

	QU. 9a Utilise actuellement	QU. 9b D'ici 3 ans	QU. 9c D'ici 10 ans
Matériel informatique ou progiciels d'ordinateur	1	1	1
Programmes de conservation des terrains agricoles et des eaux	2	2	2
Agriculture organique	3	3	3
Reboisement	4	4	4
Gestion de la pêche/pêcherie	5	5	5
Conservation & protection forestières	6	6	6
Planification des ressources hydrauliques (en eau)	7	7	7
Gestion des terres rurales	8	8	8
Aménagement des zones inondables	9	9	9
Lutte contre les parasites	10	10	10
AUTRE (INSCRIVEZ)	________	________	________
	________	________	________
AUCUN	99	99	99

9b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquelles des PRATIQUES DE GESTION DES TERRES suivantes votre entreprise VA-T-ELLE amener à exécution, s'il y a lieu, à l'un ou à l'autre de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

9c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquelles des PRATIQUES DE GESTION DES TERRES suivantes votre entreprise VA-T-ELLE amener à exécution, s'il y a lieu, à l'un ou à l'autre de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

10a) En plus des dispositifs utilisés pour le contrôle des émissions, la plupart des systèmes de traitement utilisent divers produits chimiques, instruments de mesure et de surveillance ainsi que du matériel régulateur. Parmi les types de procedés chimiques ou d'installations de surveillance de la liste suivante, quels sont ceux, s'il y a lieu, que votre entreprise utilise à l'un ou à plusieurs de ses sites canadiens? (NE LISEZ PAS LA LISTE: ENCERCLEZ TOUS LES CODES PERTINENTS)

	QU. 10a Utilise actuellement	QU. 10b D'ici 3 ans	QU. 10c D'ici 10 ans
PRODUITS CHIMIQUES POUR LA PREVENTION DE LA POLLUTION			
Agents d'absorption/d'adsorption	1	1	1
Granulation/formation de nodules	2	2	2
Bactéries/enzymes	3	3	3
Agents d'épuration	4	4	4
Protection anti-corrosion/ anti-incrustation	5	5	5
Contrôle des poussières	6	6	6
Traitement de l'eau	7	7	7
INSTALLATIONS DE MESURE/ DE SURVEILLANCE			
Instruments de surveillance/de mesure de la qualité de l'air	8	8	8
Instruments de surveillance/de mesure de la nappe d'eau souterraine	9	9	9
Instruments d'aménagement de la qualité des eaux	10	10	10
Systèmes de prélèvement d'échantillons	11	11	11
Contrôles de la combustion	12	12	12
Contrôles par ordinateur	13	13	13
Contrôles des processus	14	14	14
Détecteurs	15	15	15
Système d'acquisition de données	16	16	16
Installation de réglage/contrôle électrique	17	17	17
RECHERCHE ET LABORATOIRES SCIENTIFIQUES			
Instruments d'analyse	18	18	18
Matériel bactériologique	19	19	19
Matériel d'étalonnage	20	20	20
Chambres à environnement contrôlé	21	21	21
Produits chimiques de laboratoire	22	22	22
Systèmes de saisie de données de laboratoire	23	23	23
Installations de laboratoire	24	24	24
Réactifs & fournitures de laboratoire	25	25	25
AUTRE (INSCRIVEZ)	________	________	________
	________	________	________
AUCUN	99	99	99

10b) Au cours des trois prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1993, lesquels des produits chimiques ou instruments de mesure suivants votre entreprise VA-T-ELLE utiliser, s'il y a lieu, à l'un ou à l'autre de ses sites canadiens? (NE LISEZ PAS LA LISTE ENCERCLEZ TOUTES LES CASES PERTINENTES)

10c) Au cours des dix prochaines années seulement, c'est-à-dire d'ici le 31 décembre 1999, lesquels des produits chimiques ou instruments de mesure suivants votre entreprise VA-T-ELLE utiliser, s'il y a lieu, à l'un ou à l'autre de ses sites canadiens? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUTES LES CASES PERTINENTES)

11a) Nous voudrions maintenant que vous examiniez les frais associés aux procédures de contrôle de l'environnement dans votre entreprise. Je vais vous lire un certain nombre de domaines dans lesquels votre entreprise pourrait encourir des dépenses en capital et des frais d'exploitation directement reliés aux procédures de protection de l'environnement. Pour chacun de ces articles, veuillez indiquer combien votre entreprise a dépensé au cours de l'exercice 1989 dans tous ses sites canadiens. (INSCRIVEZ LE MONTANT EXACT. SI RIEN N'A ETE DEPENSE, VEUILLEZ INSCRIRE ZERO "0")

	QU. 11a Exercice 1989	QU. 11b Exercice 1990	QU. 11c Exercice 1992
DEPENSES EN CAPITAL			
Achat de biens d'équipement	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!
Location de biens d'équipement	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!
Frais de réaménagement de l'usine	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!	!_!_!_!_!_!_!_!_!_!
DEPENSES D'EXPLOITATION			
Fournitures - ex. produits chimiques, filtres, vêtements de protection (et pièces de rechange).	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Salaires/ Charges sociales	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Formation/ Recyclage	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Stockage/ Conteneurs	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Stockage/ Entrepôts	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Acheminement	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Entretien, révision des installations	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!
Frais de gestion des terres	!_!_!_!_!_!_!_!_!_!		!_!_!_!_!_!_!_!_!_!

11b) Au cours de l'exercice 1990, combien votre entreprise dépensera-t-elle en capital pour les articles suivants, dans tous ses sites canadiens? (INSCRIVEZ LE MONTANT EXACT. NE MENTIONNEZ PAS LES ARTICLES DE LA PARTIE "DEPENSES D'EXPLOITATION". SI RIEN, INSCRIVEZ ZERO "0")

11c) À combien estimez-vous les frais à encourir par votre entreprise au cours de l'exercice 1992 tant en dépenses en capital qu'en dépenses d'exploitation pour les articles suivants dans tous ses sites canadiens? (INSCRIVEZ LE MONTANT EXACT: SI RIEN, INSCRIRE ZERO "0")

12a) À votre connaissance. quel pourcentage de votre budget TOTAL pour l'EXERCICE 1989 a été comptabilisé pour les FRAIS D'EXPLOITATION ET LES DEPENSES EN CAPITAL relies à la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE)

EXERCICE 1989 - FRAIS D'EXPLOITATION !_!_!_! %

EXERCICE 1989 - DEPENSES EN CAPITAL !_!_!_! %

12b) Pour l'EXERCICE 1992. quelle est votre estimation du pourcentage de votre budget TOTAL qui sera comptabilisé pour les FRAIS D'EXPLOITATION ET LES DEPENSES EN CAPITAL reliés à la protection de l'environnement? (INSCRIVEZ LE POURCENTAGE)

EXERCICE 1992 - FRAIS D'EXPLOITATION !_!_!_! %

EXERCICE 1992 - DEPENSES EN CAPITAL !_!_!_! %

13) Pour l'EXERCICE 1989. combien votre entreprise a-t-elle dépensé dans tous ses sites canadiens afin d'obéir aux règlements actuels pour la protection de l'environnement? Veuillez compter aussi bien les dépenses en capital que les frais d'exploitation. (INSCRIVEZ LE MONTANT EXACT - SI RIEN N'A ETE DEPENSE. VEUILLEZ INSCRIRE ZERO "0")

!_!_!_! !_!_!_! !_!_!_!$

SI RIEN N'A ETE DEPENSE À LA QU.13. PASSEZ À LA QU.17a.

14a) L'exécution des procédures de contrôle de l'environnement peut souvent coûter un prix énorme. Au cours des cinq dernières années seulement. lesquelles des méthodes suivantes votre entreprise a-t-elle utilisées. s'il y a lieu. pour financer. non seulement l'acquisition d'installations ou d'équipement de protection de l'environnement. mais aussi les frais de fonctionnement? (NE LISEZ PAS LA LISTE: ENCERCLEZ TOUS LES CODES PERTINENTS).

	QU. 14a 5 dernières années	QU.14b À l'avenir
Emprunt bancaire à court terme	1	1
Emprunt bancaire à long terme	2	2
Effet financier	3	3
Obligations à long terme	4	4
Capitaux propres	5	5
Ventes de biens	6	6
Bénéfices réinvestis/fonds autogeneres	7	7
Fonds ou subventions du gouvernement à tous les niveaux	8	8
AUTRE (INSCRIVEZ)	____	____
	____	____

14b) Et à l'avenir. lesquelles des méthodes suivantes estimez-vous que votre entreprise devra utiliser. s'il y a lieu. pour financer l'acquisition d'installations ou d'équipement de protection de l'environnement. et les frais d'exploitation? (NE LISEZ PAS LA LISTE. ENCERCLEZ TOUS LES CODES PERTINENTS)

15a) Votre entreprise a-t-elle dû augmenter ses charges incorporables pour aider à recouvrer le coût des procédures de contrôle de l'environnement? (ENCERCLEZ OUI OU NON SELON LE CAS)

OUI .... 1 ⟶ Posez les Qu.15 b/c

NON .... 2 ⟶ Passez à la Qu. 15c

15b) Par quel pourcentage vos charges incorporables ont-elles été augmentées pour couvrir le coût des procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

!_!_!_! %

15c) Et à l'avenir, quel pourcentage de l'augmentation de vos charges incorporables sera directement attribuable aux procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

!_!_!_! %

16a) Votre entreprise a-t-elle dû accepter une marge de profits peu élevée pour aider à recouvrer le coût des procédures de contrôle de l'environnement? (ENCERCLEZ OUI OU NON SELON LE CAS)

OUI .... 1 ⟶ Posez les Qu.16 b/c

NON .... 2 ⟶ Passez à la Qu. 16c

16b) Par quel pourcentage votre marge de profits a-t-elle été baissée pour couvrir le coût des procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

!_!_!_! %

16c) Et à l'avenir, une baisse de quel pourcentage de votre marge de profits sera directement attribuable aux procédures de contrôle de l'environnement? (INSCRIVEZ LE POURCENTAGE)

!_!_!_! %

17a) Pensez-vous que les normes de qualité de l'environnement actuelles ont eu un effet positif, négatif ou neutre sur la position concurrentielle CANADIENNE de votre entreprise? (NE LISEZ PAS: ENCERCLEZ UN SEUL CODE)

Effet positif 1

Effet négatif 2

Effet neutre 3

17b) Comme la société canadienne exige davantage de règlements et de lois pour la protection de l'environnement, est-ce que, d'une manière générale, cela aura un effet positif, négatif ou neutre sur la position concurrentielle de votre entreprise? (NE LISEZ PAS: ENCERCLEZ UN SEUL CODE)

Effet positif 1

Effet négatif 2

Effet neutre 3

AG[illegible]TURE:

BEEF CATTLE FEEDLOTS
BEEF CATTLE EX FEEDIT
HOGS
SHEEP & GOATS
GENL. LIVESTOCK, NEC
DAIRY FARMS
BROILER, FRYER FOWLS
CHICKEN EGGS
TURKEYS & TURKEY EGGS
POULTRY HATCHERIES
POULTRY & EGGS, NEC
FUR ANIMALS & RABBIT
HORSES & OTHER EQUINE
ANIMAL SPECS, NEC
GENL. FARM LIVESTOCK
SOIL PREPARATION SERVICES
CROP PLANTING PROTEC
CROP HARVESTING
CROP PREPARE SVCS MKT
COTTON GINNING
GENERAL CROP SERVICES
VET. SVCS, FARM STOCK
VET. SVCS SPECIALTIES
LIVESTOCK SVCS X SPEC
ANIMAL SPECIALTY SVCS
FARM LABOUR CONTRACTOR
FARM MANAGEMENT SERVICES
LANDSCAPE COUNSELLING
LAWN & GARDEN SVCS
ORNAMENTAL SHRUB SVCS

FORESTRY/LUMBER/PAPER PRODUCTS:

TIMBER TRACTS
FOREST NURS & SEED
EXTRACTION PINE GUM
GATHERING FOREST PDTS
FORESTRY SERVICES
LOGGING CAMPS & CONTRACTORS
SAWMILLS, PLANNING MILLS & GENERAL
HARDWOOD FLOOR & PART
SPECIAL PRODUCT SAWMILLS NEC
MILLWORK
WOOD KITCHEN CABINETS
HARDWOOD VENEER PLYWOOD
SOFTWOOD VENEER PLYWOOD
STRUCTURAL WOOD MEMBERS
NAIL WOODEN BOXES, SHOOK
WOOD PALLETS & SKIDS
WOOD CONTAINERS, NEC
MOBILE HOMES
PREFAB. WOODEN BUILDINGS
WOOD PRESERVING
PARTICLEBOARD
WOOD PRODUCTS, NEC
PULP MILLS
PAPER MILLS, EX BLDG. PPR.
PAPERBOARD MILLS
PAPER COATING & GLAZING
ENVELOPES
BAGS, EXCEPT TEXTILE BAGS
DIE CUT PAPER & CARDBOARD
PRESS & MOLDED PULP GOODS
SANITARY PAPER PRODUCTS
STATIONERY PRODUCTS
CONVERTED PAPER PRODUCTS
FOLDING PAPERBOARD BOXES
SETUP PAPERBOARD BOXES
CORRUGATED & SOLID FIBER BOXES
SANITARY FOOD CONTAINERS
FIBER CANS, DRUMS, ETC
BLDG. PAPER, BOARD MILLS

METAL MINING:

IRON ORES
COPPER ORES
LEAD, ZINC ORES
GOLD ORES
SILVER ORES
BAUXITE, ALUM ORES
FERROALLOY ORES
METAL MINING SVCS
URANIUM-RADIUM ORE
METAL ORES, NEC

COAL/OIL/GAS:

ANTHRACITE
ANTHRACITE MINING
BITUMINOUS COAL LIGNI
BITUMN, LNITE NEC
CRUDE OIL & NAT GAS
NATURAL GAS LIQUIDS
DRILLING OIL, GAS WELLS
OIL, GAS EXPLORATION SERVICES
OIL, GAS FLDS SVCS NEC

OTHER MINERAL MINING:

DIMENSION STONE
CRUSHED & BROKEN LIMESTONE
CRUSHED & BROKEN GRANITE
CRUSHED & BROKEN STONE NEC
CONSTRUCTION SAND & GRAVEL
INDUSTRIAL SAND
BENTONITE
FIRE CLAY
CLAY & RELATED MINERALS
BARITE
FLUORSPAR
POTSH SODA, BORATE MINERALS
PHOSPHATE ROCK
ROCK SALT
SULFUR
CHEM. FERTILIZER, MINERAL MINING NEC
NONMETALIC MINERALS SERVICES
GYPSUM
TALC SOAPSTONE, PYROPHYLLITE
NONMETALIC MINERALS NEC

F KINDRED PRODUCTS:

MEAT PACKING PLANTS
SAUSAGES & PREP. MEATS
POULTRY DRESSING PLANTS
POULTRY & EGG PROCESSING
CREAMERY BUTTER
CHEESE, NATURAL & PROCESSED
CONDENSED & EVAPORATED MILK
ICE CREAM & FROZEN DESSERTS
FLUID MILK
CANNED SPECIALTIES
CANNED FRUITS & VEGETABLES
DEHYDRATED FOOD PRODUCTS
PICKELING, SAUCE, SALAD DRESSINGS
FROZEN FRUITS & VEGETABLES
FROZEN SPECIALTIES
FLOUR, GRAIN MILL PRODUCTS
CEREAL PREPARATIONS
RICE MILLING
BLENDED & PREPARED FLOUR
WET CORN MILLING
DOG, CAT & OTHER PET FOOD
PREPARED FEEDS NEC
BREAD, CAKE, RE PDTS
COOKIES & CRACKERS
RAW CANE SUGAR
CAIN SUGAR REFINING
BEET SUGAR
CONFECTIONERY PRODUCTS
CHOCOLATE & COCOA PRODUCTS
CHEWING GUM
COTTONSEED OIL MILLS
SOYBEAN OIL MILLS
VEGETABLE OIL MILLS
ANIMAL & SEA FATS & OIL
LARD & COOKING OILS
MALT LIQUORS
MALT
WINES, BRANDY & BRANDY SPIRITS
DIST LIQUOR EX BRAND
BOTTLED & CANNED SOFT DRINKS
FLAVORING EXTRACTS & SYRUPS NEC
CANNED & CURED SEAFOODS
FRESH/FROZEN FISH
ROASTED COFFEE
MANUFACTURED ICE
MACARONI, SPAGHETTI
FOOD PREPARATIONS NEC

TEXTILE/PRINTING/LEATHER PRODUCTS:

WEAVING MILLS, COTTON
WEAVING MILLS, SYNTHETICS
WEAVING FINISH MILLS, WOOL
NARROW FABRIC MILLS
WOMENS HOSIERY
HOSIERY, NEC
KNIT OUTERWEAR MILLS
KNIT UNDERWEAR MILLS
CIRCULAR KNIT FABRIC MILLS
WRAP KNIT FABRIC MILLS
KNITTING MILLS, NEC
FINISHING PLANTS COTTON
FINISHING PLANTS SYNTHETICS
FINISHING PLANTS NEC
WOVEN CARPETS RUGS
TUFTED CARPETS, RUGS
CARPETS, RUGS NEC
YARN MILLS, EX WOOL
THROWG, WINDING MILLS
WOOL YARN MILLS
THREAD MILLS
FELT GOODS NEC
LACE GOODS
PADDING & UPHOLSTERY FILLINGS
PROCESSED TEXTILE WASTE
COATED FABRIC, NOT RUBBERIZED
TIRE CORD & FABRIC
NONWOVEN FABRICS
CORDAGE, TWINE
TEXTILE GOODS NEC
NEWSPAPERS
PERIODICALS
BOOK PUBLISHING
BOOK PRINTING
MISCELLANEOUS PUBLISHING
COMMERCIAL LETTERHEAD PRINTING
COMMERCIAL LITHO PRINTING
ENGRAVING PLATE PRINTING
COMMERCIAL GRAVURE PRINTING
COMMERCIAL PRINTING
MANIFOLD BUSINESS FORMS
GREETING CARD PUBLISHING
BLANKBOOKS, LOOSELEAF BINDERS
BOOKBINDING & RELATED WORK
TYPESETTING
PHOTOENGRAVING
ELECTRO UPG, STEREOTYPING
LITHO PLATEMAKING SERVICES
LEATHER TANNING & FINISHING
FOOTWEAR CUT STOCK
HOUSE SLIPPERS
MENS SHOES EXCEPT ATHLETIC
LADIES SHOES EXCEPT ATHLETIC
FOOTWEAR EXCEPT RUBBER NEC
LEATHER GLOVES & MITTENS
LUGGAGE
WOMENS HANDBAGS
PERSONAL LEATHER GOODS
LEATHER GOODS NEC

CHEMICALS AND ALLIED PRODUCTS:

ALKALIES & CHLORINE
INDUSTRIAL GASES
INORGANIC PIGMENTS
INDUSTRIAL INORGANIC CHEMICALS
PLASTICS MATERIAL
SYNTHETIC RUBBER
CELLULOSIC MAN-MADE FIBERS
ORGANIC FIBERS
BIOLOGICAL PRODUCTS
MEDICINAL CHEMICALS & BOTANICALS PROD.
PHARMACEUTICAL PREPARATIONS
SOAP & OTHER DETERGENTS
POLISHES & SANITARY
SURFACE ACTIVE AGENTS
TOILET PREPARATIONS
PAINTS & ALLIED PRODUCTS
GUN & WOOD CHEMICALS
CYCLIC CRUDES INTERMI
INDUSTRIAL ORGANIC CHEMICALS
NITROGENOUS FERTILIZER
PHOSPHATIC FERTILIZER
MIXING FERTILIZERS
AGRICULTURAL CHEMICALS
ADHESIVES & SEALANTS
EXPLOSIVES
PRINTING INK
CARBON BLACK
CHEMICAL PREPARATIONS

OIL/COAL/RUBBER PRODUCTS:

PETROLEUM REFINING
PAVING MIXTURES & BLOCKS
ASPHALT FELTS & COATINGS
LUBRICATING OILS & GREASES
PETROLEUM & COAL PDTS NEC
TIRES & INNER TUBES
RUBBER & PLASTIC FOOTWEAR
RECLAIMED RUBBER
RUBBER & PLASTIC HOSES
FABRICATED RUBBER PRODUCTS
MISCELLANEOUS PLASTIC PRODUCTS

STONE/CLAY/GLASS PRODUCTS:

FLAT GLASS
GLASS CONTAINERS
PRESSED & BLOWN GLASS NEC
GLASS PRODUCTS MADE OF PURCHASE GLASS
CEMENT, HYDRAULIC
BRICK & STRUCTURAL CLAY TILE
CERAMIC WALL & FLOOR TILE
CLAY REFRACTORIES
STRUCTURAL CLAY PRODUCTS NEC
VITREOUS PLUMBING FIXTURES
VITREOUS CHINA FD UTENSIL
EARTHENWARE FOOD UTENSILS
PORCELAIN ELECTRICAL SUPPLIES
POTTERY PRODUCTS NEC
CONCRETE BLOCK & BRICK
CONCRETE PRODUCTS NEC
READY-MIXED CONCRETE
LIME
GYPSUM PRODUCTS
CUT STONE & STONE PRODUCTS
ABRASIVE PRODUCTS
ASBESTOS PRODUCTS
GASKETS, PACKING & SEALING DEVICES
GROUND OR TREATED MINERALS
MINERAL WOOL
NONCLAY REFRACTORIES
NONMETAL MINERAL PRODUCTS NEC

PRIMARY METAL FABRICATION:

BLAST FURNACES & STEEL MILLS
ELECTROMETALLURGICAL PRODUCTS
STEEL WIRE, RE PRODUCTS
COLD FINISHING STEEL SHAP
STEEL PIPES & TUBES
GRAY IRON FOUNDRIES
MALLABLE IRON FOUNDRIES
STEEL INVESTMENT FOUNDRIES
STEEL FOUNDRIES NEC
PRIMARY COPPER
PRIMARY LEAD
PRIMARY ZINC
PRIMARY ALUMINUM
PRIME NONFERROUS METALS NEC
SEC NONFERROUS METALS
COPPER ROLLING, DRAWING
ALUMINUM SHEET, PLATE & FOIL
ALUMINUM EXTRUDED PRODUCTS
ALUMINUM ROLLING & DRAWING
ROLLING, DRAWING NEC
NONFERROUS WIRE & DRAWING
ALUMINUM CASTINGS
BRASS, BRONZE & COPPER CASTINGS
NONFERROUS CASTINGS NEC
METAL HEAT TREATING
PRIMARY METAL PRODUCTS
METAL CANS
METAL DRUMS & PAILS
CUTLERY
EDGE TOOLS
HAND SAWS & SAW BLADES
HARDWARE NEC
METAL SANITARY WARE
PLUMBING FIXTURES & BRASS GOODS
HEATING EQUIPMENT EXCEPT ELECTRIC
FABRICATED STRUCTURAL STEEL
METAL DOOR, SASH, TRIM
FABRICATED PLATE WORK
FAB PLATE WORK
STEEL METAL WORK
ARCH METAL WORK
PREFAB. METAL BUILDINGS
MISC. METAL WORK
SCREW MACHINE PRODUCTS
BOLTS, NUTS, RIVETS & WASHERS
IRON & STEEL FORGINGS
NONFERROUS FORGINGS
AUTOMOTIVE STAMPING
CROWNS & CLOSURES
METAL STAMPINGS NEC
PLATING & POLISHING
METAL COATING & ALLIED SERVICES
SMALL ARMS AMMUNITIONS
AMMUNITIONS FOR SMALL ARMS, NEC
SMALL ARMS
ORDNANCE & ACCESSORIES NEC
STEEL SPRINGS
VALVES & PIPE FITTINGS
WIRE SPRINGS
MISC. FABRICATED WIRE PRODUCTS
METAL FOIL & LEAF
FABRICATED PIPE FITTINGS
FABRICATED METAL PRODUCTS

MACHINERY/ELECTRICAL TRANSPORTATION EQUIPMENT:

STEAM ENGINES TURBINES
INTERNAL COMBUSTION ENGINES NEC
FARM MACHINERY & EQUIPMENT
LAWN & GARDEN EQUIPMENT
CONSTRUCTION MACHINERY
MINING MACHINERY
OIL FIELD MACHINERY
ELEVATORS & MOVING STAIRWAYS
CONVEYORS & CONVEYING EQUIPMENT
HOISTS, CRANES, MONORAILS
INDUSTRIAL TRUCKS & TRACTORS
MACHINE TOOLS (METAL CUT)
MACHINE TOOLS, METAL FORMING
SPECIAL DIES, TOOLS
MACHINE TOOL ACCESSORIES
POWER DRIVEN HAND TOOLS
ROLLING MILL MACHINERY
METALWORKING MACHINERY
FOOD PRODUCTS MACHINERY
TEXTILE MACHINERY
WOODWORKING MACHINERY
PAPER INDUSTRIES MACHINERY
PRINTING TRADES MACHINES
SPECIAL INDUSTRY MACHINERY
PUMPS & ITS EQUIPMENT
BALL & ROLLER BEARINGS
AIR & GAS COMPRESSORS
BLOWERS & FANS
INDUSTRIAL PATTERNS
SPEED GEAR CHANGERS
INDUSTRIAL FURNACES, OVENS
POWER TRANSMISSION EQUIP.
GENERAL IND. MACHINES NEC
TYPEWRITERS
ELECTRONIC COMPUTING EQUIPMENT
CALCULATING & ACCOUNTING MACH.
PERSONAL COMPUTERS
SCALES & BALANCES
OFFICE MACHINES, NEC
AUTOMATIC MERCHANDISING MACHINES
COMMERCIAL LAUNDRY EQUIPMENT
REFRIG. & HEATING EQUIPMENT
MEASURING & DISPENSING PUMPS
SERVICE INDUSTRY MACHINES NEC
CARBURETORS, PITSON, RINGS
MACHINERY EXCEPT ELECTRICAL
TRANSFORMERS
SWITCHGEAR, SWITCHBOARD APPARATUS
MOTORS & GENERATORS
INDUSTRIAL CONTROLS
WELDING APPARATUS
CARBON & GRAPHITE PRODUCTS
ELECTRICAL INC. DPPARATUS NEC
HOUSEHOLD COOKING EQUIPMENT
HOUSEHOLD REFRIGERATORS & FREEZERS
HOUSEHOLD LAUNDRY EQUIPMENT
ELECTRIC HOUSEWARES & FANS
HOUSEHOLD VACUUM CLEANSERS
SEWING MACHINES
HOUSEHOLD APPLIANCES NEC
ELECTRIC LAMPS
CURRENT-CARRYING WIRING DEVICES
NONCURRENT-CARRYING WIRING DEVICES
RESIDENT LIGHTING FIXTURES
COMMERCIAL LIGHTING FIXTURES
VEHICULAR LIGHTING EQUIPMENT
LIGHTING EQUIPMENT
RADIO, TV RECEIV. SETS
PHONOGRAPH RECORDS
TELEPHONE & TELEGRAPH APPARATUS
RADIO & TV COMMUNICATION EQUIP
ELECTRON TUBES RECEIVING TYPE
CATHODE RAY PICTURE TUBES
ELECTRON TUBES, TRANSMITTING
SEMICONDUCTORS
ELECTRONIC CAPACITORS
ELECTRONIC RESISTORS
ELECTRONIC COILS/TRANSFORMERS
ELECTRONIC CONNECTORS
ELECTRONIC COMPONENTS
STORAGE BATTERIES
PRIMARY BATTERIES, DRY, WET
X-RAY APPARATUS, TUBES
ENGINES ELEC. EQUIPMENT
ELECTRICAL EQUIPMENT NEC
MOTOR VEHICLE BODIES
TRUCK & BUS BODIES
MOTOR VEHICLE PARTS & ACCESSORIES
TRUCK TRAILERS
MOTOR HOMES
AIRCRAFTS
AIRCRAFT ENGINES & PARTS
AIRCRAFT EQUIPMENT NEC
SHIP BUILDING & REPAIRING
BOAT BUILDING & REPAIRING
RAILROAD EQUIPMENT
MOTORCYCLE & BICYCLE PARTS
GUIDED MISSILES & SPACE VEHICLES
SPACE VEHICLE EQUIPMENT
TRAVEL TRAILERS & CAMPERS
TANKS & ITS COMPONENTS
TRANSPORTATION EQUIPMENT

LOCAL & AIR TRANSPORTATION:

LOCAL & SUBURBAN TRANSPORTATION
LOCAL PASSENGER TRANSPORTATION
TAXICABS INTERCITY HIGHWAY TRANSPORTATION
LOCAL PASSENGER CHART
CHARTER SERVICES EXCEPT LOCAL
SCHOOL BUSES
BUS TERMINAL FACILITIES
BUS SERVICE FACILITIES
CERTIFICATE AIR TRANS
NON CERTIFICATE AIR TRANS
AIRPORTS & FLYING FIELDS
AIRPORT TERMINAL SERVICES

TRUCKING & WAREHOUSING:

LOCAL TRUCKING WITHOUT STORAGE
TRUCKING EXCEPT LOCAL
LOCAL TRUCKING & STORAGE
FARM PRODUCT WAREHOUSNG & STORAGE
REFRIGERATED WAREHOUSING
HOUSEHOLD GOODS WAREHOUSING
GENERAL WAREHOUSING & STORING
SPECIAL WAREHOUSING & STORING NEC
TRUCKING TERMINAL FAC

PIPELINE/ELECTRIC/GAS SERVICES:

CRUDE PETROLEUM PIPE LINES
REFINED PETROLEUM PIPE LINES
PIPE LINES NEC
ELECTRIC COMPANY & SYSTEMS
NATURAL GAS TRANSMISSION
GAS TRANSMISSION & DISTRIBUTION
NATURAL GAS DISTRIBUTION
GAS PRODUCTION OR DISTRIBUTION
ELECTRIC & OTHER SERVICES COMBINED
GAS & OTHER SERVICES COMBINED
WATER SUPPLY
SEWAGE SYSTEMS
REFUSE SYSTEMS
SANITARY SERVICES NEC
STEAM SUPPLY
IRRIGATION SYSTEMS

WHOLESALE TRADE:

AUTOS, & MOTOR VEHICLES
AUTOMOBILE EQUIPMENT
TIRES & TUBES
FURNITURE
HOME FURNISHINGS
LUMBER, PLYWOOD & MILLWORK
CONSTRUCTION MATERIALS
SPORTING & RECREATIONAL GOODS
TOYS, HOBBY GOODS & SUPPLIES
PHOTO EQUIPMENT & SUPPLIES
METAL SERVICE CENTRES & OFFICES
COAL MINERALS & ORES
ELECTRICAL APPARATUS & EQUIPMENT
ELECTRICAL APPLIANCES, TV & RADIO
ELECTRONIC PARTS & EQUIPMENT
HARDWARE
PLUMBING & HYDRONIC SUPPLIES
WARM AIR HEAT & AIRCONDITIONING
REFRIGERATION EQUIPMENT & SUPPLIES
COMMERCIAL MACHINES & EQUIPMENT
CONSTRUCTION & MINING MACHINERY
FARM MACHINERY & EQUIPMENT
INDUSTRIAL MACHINERY & EQUIPMENT
INDUSTRIAL SUPPLIES
PROFESSIONAL EQUIPMENT & SUPPLIES
SERVICE ESTABLISHMENT EQUIPMENT
TRANSPORTATION EQUIPMENT & SUPPLIES
SCRAP & WASTE MATERIAL
JEWELRY & WATCHES
DURABLE GOODS NEC
PRINTING & WRITING PAPER
STATIONERY & SUPPLIES
INDUSTRIAL & PERSONAL SERVICE PAPER
DRUGS, DRUG PROPRIETARIES
PIECE GOODS
NOTIONS & DRY GOODS
MEN'S & BOYS CLOTHING & FURNISHINGS
WOMEN' & KIDS CLOTHING & ACCESSORIES
FOOTWEAR
GROCERIES, GENERAL LINE
FROZEN FOODS
DAIRY PRODUCTS
POULTRY & POULTRY PRODUCTS
CONFECTIONERY
FISH & SEAFOODS
MEAT & MEAT PRODUCTS
FRESH FRUITS & VEGETABLES
GROCERIES & RELATED PRODUCTS
COTTON
GRAIN
LIVESTOCK
FARM PRODUCT RAW MATERIALS
CHEMICALS & ALLIED PRODUCTS
PETROLEUM BULK DEPOTS & TERM
PETROLEUM PRODUCTS
BEER & ALE
WINES & DISTILLED ALCOHOLIC BEVS
FARM SUPPLIES
TOBACCO & TOBACCO PRODUCTS
PAINTS, VARNISHES & SUPPLIES
NONDURABLE GOODS NEC

AUTO DEALERS/SERVICE STATIONS:

NEW & USED CAR DEALERS
USED CAR DEALERS
AUTO HOME SUPPLY STORES
GASOLINE SERVICE STATIONS
BOAT DEALERS
UTILITY TRAILER DEALERS
MOTORCYCLE DEALERS
AUTOMOTIVE DEALERS

MISC. RETAIL & REPAIR:

DRUG & PROPRIETARY STORES
LIQUOR STORES
USED MERCHANDISE STORES
SPORTING GOODS & BICYCLE STORES
BOOK STORES
STATIONERY STORES
JEWELRY STORES
HOBBY, TOY & GAME STORES
PHOTOGRAPHIC SUPPLY STORES
GIFT & NOVELTY SHOPS
LEATHER PRODUCTS STORES
SEWING & NEEDLEWORK PIECE
MAIL ORDER HOUSES
VENDING MACHINE OPERATORS
DIRECT SELLING ESTABLISHMENTS
FUEL & ICE DEALERS NEC
FUEL & OIL DEALERS
BOTTLE GAS DEALERS
FLORISTS
CIGAR STORES & STANDS
NEWS DEALERS & NEWSSTANDS
MISCELLANEOUS RETAIL STORES
RADIO & TV REPAIRS
REFRIGERATOR SERVICE & REPAIRS
ELECTRICAL REPAIR SHOPS
WATCHES, CLOCKS & JEWELRY REPAIRS
REUPHOLSTERY & FURNITURE REPAIRS
WELDING REPAIRS
ARMATURE REWINDING SHOPS
REPAIR SERVICES NEC

PERSONAL & BUSINESS SERVICES:

POWER LAUNDRIES, F COM
GARMENT CLEANERS & AGENTS
LINEN SUPPLY
DIAPER SERVICE
COIN LAUNDRY & CLEANERS
DRY CLEANING PLANTS EX RUG
CARPET & UPHOLSTERY CLEANING
INDUSTRIAL LAUNDERERS
LAUNDRY & GARMENT SERVICES
PHOTOGRAPHIC STUDIOS
BEAUTY SHOPS
BARBER SHOPS
SHOE REPAIR SHOPS
FUNERAL SERVICE
MISCELLANEOUS PERSONAL SERVICES
ADVERTISING AGENCY
OUTDOOR ADVERTISING SERVICES
RADIO & TV AD REPS
MISCELLANEOUS ADVERTISING
CREDIT REPORTING & COLLECTION
DIRECT MAIL ADVERTISING
BLUEPRINTING & PHOTOCOPYING
COMMERCIAL PHOTOGRAPHY & ART
STENO & DUPLICATING SERVICES NEC
WINDOW CLEANING
DISINFECTING & EXTERMINATING SERVICES
MISC BUILDING SERVICES
NEWS SYNDICATES
EMPLOYMENT AGENCIES
TEMPORARY AID SUPPLY SERVICES
EMPLOYMENT SERVICES NEC
COMPUTER PROGRAMMING
DATA PROCESSING SERVICES
COMPUTER RELATED SERVICES
RESEARCH & DEVELOPMENT LABS
MANAGEMENT & PUBLIC RELATIONS
DETECTIVE & PROTECTIVE SERVICES
EQUIPMENT RENTAL & LEASING
PHOTOFINISHING LABS
TRADING STAMP SERVICES
COMMERCIAL TESTING LABORATORIES
BUSINESS SERVICES

AUTO REPAIR:

PASSENGER CAR RENTAL
TRUCK RENTAL & LEASE
UTILITY, HOUSE TRAILER RENT
PARKING LOTS
PARKING STRUCTURES
TOP & BODY REPAIR SHOPS
TIRE RETREADING & REPAIR SHOPS
PAINT SHOPS
GENERAL AUTO REPAIR SHOPS
AUTO REPAIR SHOPS NEC
CAR WASHES
AUTOMOTIVE SVCS NEC

HEALTH SERVICES:

OFFICE OF PHYSICIANS
OFFICES OF DENTISTS
OFFICES OF OSTEOPATHICS
OFFICES OF CHIROPRACTORS
OFFICES OF OPTOMETRISTS
HEALTH PRACTITIONERS
SKILLED NURSING CARE
NURSING & PERSONAL CARE
GENERAL MEDICAL & SURG HOSPITALS
PSYCHIATRIC HOSPITALS
SPECIALTY HOSPITALS EX PSYCHIATRIC
MEDICAL LABORATORIES
DENTAL LABORATORIES
OUTPATIENT CARE FACILITIES
HEALTH & ALLIED SERVICES

APPENDIX C

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR
COMPANIES WITH LESS THAN 50 EMPLOYEES

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
FORESTRY/LUMBER	10,293	$346,150	$3,562,923,838
WHOLESALE TRADE	52,876	$39,985	$2,114,271,597
UTILITIES	1,211	$727,030	$880,433,497
MISC. RETAIL & REPAIR	48,397	$9,780	$473,332,400
PERSONAL & BUSINESS SERVICES	48,242	$7,344	$354,293,735
COAL/OIL/GAS	3,644	$71,686	$261,225,551
TRUCKING & WAREHOUSING	20,170	$9,587	$193,365,350
MACHINERY & TRANSPORTATION EQUIPMENT	9,127	$20,147	$183,881,247
METAL MINING	1,435	$87,055	$124,923,826
AUTO DEALERS & SERVICE STATIONS	21,157	$5,797	$122,648,754
AUTO REPAIR	20,711	$5,427	$112,390,085
FOOD & KINDRED PRODUCTS	2,824	$36,283	$102,463,750
AGRICULTURE	8,667	$11,510	$99,759,565
PRIMARY METAL FABRICATION	4,913	$18,590	$91,331,874
TEXTILE/LEATHER/RUBBER	8,047	$7,782	$62,625,697
STONE/CLAY/GLASS	2,018	$26,111	$52,691,500
OIL/COAL/RUBBER PRODUCTS	1,476	$30,445	$44,936,424
HEALTH SERVICES	3,717	$4,488	$16,683,500
LOCAL & AIR TRANSPORTATION	3,106	$4,934	$15,324,933
CHEMICALS	1,460	$5,714	$8,342,189
OTHER MINING	593	$8,529	$5,057,500
TOTAL	274,084		$8,882,906,812

PROJECTED EXPENDITURES RANKED BY INDUSTRY SECTOR COMPANIES WITH 50 EMPLOYEES OR MORE

	NUMBER OF ESTABLISHMENTS	MEAN SCORE	UNWEIGHTED TOTAL DOLLARS
PRIMARY METAL FABRICATION	732	$6,717,859	$4,917,472,711
WHOLESALE TRADE	1,847	$1,243,428	$2,296,610,968
FORESTRY/LUMBER	755	$2,200,738	$1,661,557,182
COAL/OIL/GAS	199	$4,874,883	$970,101,645
METAL MINING	132	$5,814,899	$767,566,667
LOCAL & AIR TRANSPORTATION	319	$1,287,656	$410,762,300
MACHINERY & TRANSPORTATION EQUIPMENT	1,117	$170,028	$189,921,162
FOOD & KINDRED PRODUCTS	553	$224,988	$124,418,381
PERSONAL & BUSINESS SERVICES	1,516	$80,983	$122,769,945
OTHER MINING	50	$2,068,761	$103,438,069
UTILITIES	138	$644,329	$88,917,468
CHEMICALS	310	$261,326	$81,011,200
TRUCKING & WAREHOUSING	498	$140,514	$69,976,034
STONE/CLAY/GLASS	190	$350,083	$66,515,825
MISC. RETAIL/REPAIR	517	$89,768	$46,410,000
TEXTILE/LEATHER/RUBBER	700	$60,308	$42,215,642
OIL/COAL/RUBBER PRODUCTS	320	$104,450	$33,424,117
HEALTH SERVICES	1,144	$8,930	$10,216,313
AUTO DEALERS & SERVICE STATIONS	816	$9,110	$7,434,000
AUTO REPAIR	131	$33,742	$4,420,266
AGRICULTURE	93	$46,774	$4,350,000
TOTAL	12,077		$12,019,509,896